

# APPENDIX A

## THE PLANNING PROCESS

Appendix A is divided into two parts: A-1 describes the nine planning actions in BLM's RMP-EIS process and A-2 lists the planning criteria that were developed and used by Yuma District for completing the draft plan.

### A-1: Actions in the RMP-EIS Process

The planning process described in BLM planning regulations 43 CFR part 1600 consists of nine actions summarized below. Yuma District has completed the first seven actions.

#### ACTION 1: Identification of Issues

Identification of the significant issues determined the scope of the plan. The general public, Indian tribes, and state, local and other federal agencies were asked to identify public land management issues in the Yuma District. Public meetings were held in Parker, Bullhead City, and Lake Havasu City, Arizona, in January 1982 and in Yuma, Arizona, and Blythe, California, in May 1983. BLM specialist added management concerns that were not identified by these groups. The seven planning issues for the Yuma District are described in Chapter 1.

#### ACTION 2: Development of Planning Criteria

Planning criteria were developed to identify the considerations and constraints that would be applied to the planning process. Criteria helped to determine the kinds of alternatives to be developed and the factors to be considered in evaluating alternatives and selecting a preferred alternative. Yuma District's planning criteria were distributed to the public in August 1983 for review and comment.

#### ACTION 3: Inventory Data and Information Collection

Resource specialists reviewed and compiled base data from existing and updated inventories of environmental, social, economic, and institutional characteristics in the planning area. This information was used to develop the resource descriptions and environmental analyses contained in Chapters 3 and 4 of this draft environmental impact statement. Existing BLM plans were also reviewed to utilize recommendations, decision and directives that would apply to all resource activities.

#### ACTION 4: Management Situation Analysis

The issue-related data collected in Action 3 was compiled in one document called the Management Situation Analysis (MSA). The MSA describes how issue-related land uses are currently managed in the district, existing problems and the capability of the various resources to respond to the identified issues and concerns. It also describes the resources that would be affected by the decisions, how these resources are currently managed and lists possible options for managing the resources. The MSA was used in developing Chapters 2, 3 and 4 of the draft EIS. This document is on file at the BLM Havasu Resource Area and Yuma District Offices and is available for public review.

#### ACTION 5: Formulation of Alternatives

Five complete and reasonable alternatives for resolving the RMP issues were prepared by the planning team. A "no action" alternative was prepared in addition to several alternative plans placing emphasis either on environmental protection, resource production or balanced resource use. The alternatives were reviewed by the public and by BLM specialists prior to incorporation in this draft EIS.

#### ACTION 6: Estimation of Effects of the Alternatives

The physical, biological, economic and social effects of implementing each alternative were estimated in order to allow for a comparative evaluation of impacts. Chapter 4 (Environmental Consequences) describes these impacts.

#### ACTION 7: Selection of a Preferred Alternative

Based on the planning criteria, management options<sup>1</sup> presented in the alternatives and the impacts of each alternative, the District and Area Managers developed a Preferred Alternative to provide what they considered to be the most acceptable resolution of the issues. The Yuma District Preferred Alternative combines and, in some cases, modifies options from the various other alternatives. The Preferred Alternative and the analysis of its impacts are released in the form of a draft environment impact statement for public review and comment together with the description and analysis of the other alternatives. Yuma District is currently at this stage of the process. Public review may result in new information being presented, problems being pointed out in BLM's Preferred Alternative, or other alternatives being suggested.

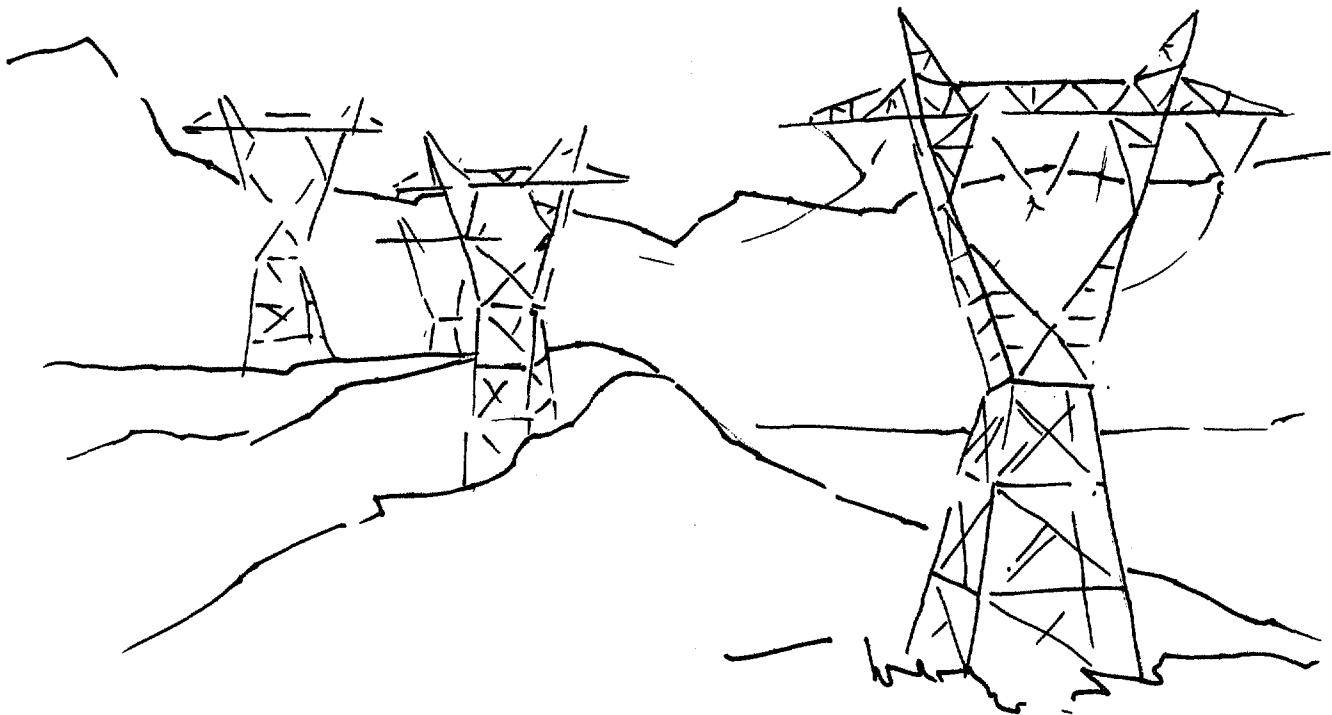
**ACTION 8: Selection of the Resource Management Plan**

The District and Area Managers will examine the public comments that are received and select and recommend a proposed resource management plan to the BLM State Director. The State Director will then publish the final RMP-EIS. After a thirty-day appeal period and resolution of any appeals on the final EIS, the RMP is approved by the State Director.

**ACTION 9: Monitoring and Evaluation**

Implementation of the plan will be monitored to ensure effective resolution of the planning issues and achievement

of the desired results. Intervals and standards for monitoring will be established in the final RMP or Record-of-Decision and monitoring will continue from the time the RMP is adopted until changing conditions require a revision of the plan. As changes are required, the RMP will be amended or revised using an environmental assessment or environmental impact statement, public involvement, and inter-agency coordination as required by federal regulations 43 CFR 1600. Monitoring and evaluation reports will be available for public review.



## Appendix A-2: Planning Criteria for the Yuma District RMP-EIS

| PLANNING<br>ISSUE                              | CRITERIA FOR<br>DEVELOPING ALTERNATIVES   | CRITERIA FOR ESTIMATING<br>THE EFFECTS OF ALTERNATIVES  | CRITERIA FOR SELECTING<br>THE PREFERRED ALTERNATIVE   |
|--|---|---|---|
| GENERAL CRITERIA<br>(APPLICABLE TO ALL ISSUES) | <p>The alternatives for individual planning issues may include:</p> <ul style="list-style-type: none"> <li>differing management actions and intensities,</li> <li>differing land areas, locations, or boundaries,</li> <li>differing levels of public investment,</li> <li>application of special conditions or stipulations,</li> <li>allowable resource uses.</li> </ul> <p>The alternatives should:</p> <ul style="list-style-type: none"> <li>provide a multiple-use and sustained yield management framework for the full variety of resources that occur in the Yuma District. Single uses or less than full multiple use of resources may be applied on some lands due to the nature and value of the resources or uses involved,</li> <li>be as consistent as possible with the officially adopted resource management plans, programs, or policies of other Federal, State or local government agencies, and Indian tribes.</li> <li>be technically feasible, and cost efficient.</li> </ul> | <p>Evaluate the economic and social impacts of alternatives.</p> <p>Analyze the impacts on natural, Native American, and mineral and energy values</p> <p>Assess the impacts on the uses and values of adjacent non-Federal lands.</p> <p>Evaluate accumulative impacts.</p> <p>Estimate probable ranges of impacts where effects cannot be precisely determined.</p> | <p>The preferred alternative should:</p> <ul style="list-style-type: none"> <li>be cost effective,</li> <li>resolve planning issues while achieving management objectives,</li> <li>comply with the Endangered Species Act,</li> <li>reflect public needs and opinions,</li> <li>Comply with federal and state laws,</li> <li>be as consistent as possible with plans of other agencies.</li> </ul> |
| 1. WILDLIFE HABITAT                            | <p>Alternatives for Wildlife Habitat may include:</p> <ul style="list-style-type: none"> <li>conservation of federal or state listed threatened, endangered (T&amp;E), or sensitive species,</li> <li>protection of critical habitats for listed species,</li> <li>identification and protection of key wildlife habitat areas from disruption.</li> </ul>  | <p>Evaluate impacts on rangeland and burros.</p> <p>Consider the degree to which T&amp;E sensitive and game species habitat is maintained or improved.</p>  | See General Criteria  |

# APPENDIX A-2: PLANNING CRITERIA FOR THE YUMA DISTRICT RMP-EIS (Cont.)

| PLANNING ISSUE               | CRITERIA FOR DEVELOPING ALTERNATIVES  | CRITERIA FOR ESTIMATING THE EFFECTS OF ALTERNATIVES  | CRITERIA FOR SELECTING THE PREFERRED ALTERNATIVE   |
|------------------------------|---|--|--|
| 2. SPECIAL MANAGEMENT AREAS  | <p>Alternatives for Special Management areas may involve:</p> <p>a variety of uses, as long as they are consistent with the purpose of protecting important environmental resources,</p> <p>special designation to impose special management in an area having important environmental resources.</p>   | <p>Consider the degree to which the scientific and educational values of the important environmental resource will be maintained or enhanced.</p>  | <p>See General Criteria.</p>   |
| 3. GRAZING                   | <p>Alternatives for Grazing may include:</p> <p>categorization of allotments based on the dominant management need, range condition, and potential,</p> <p>consideration of ephemeral vs. perennial classification for existing allotments,</p> <p>different levels of livestock use.</p> <p>mixes of uses including modification or cancellation of a grazing lease or permit.</p> | <p>Evaluate impacts on present range condition and production capacity for livestock, wildlife, and burros.</p> <p>Evaluate impacts on soil and watershed conditions.</p>  | <p>See General Criteria.</p>   |
| 4. LAND OWNERSHIP ADJUSTMENT | <p>Alternatives for Lands may involve the inclusion of terms or conditions necessary to ensure proper land use and protection of the public interest.</p>   | <p>See General Criteria.</p>   | <p>Parcels of public land identified for disposal must be:</p> <p>difficult or uneconomic for the federal government to manage,</p> <p>no longer required for the purpose for which they were acquired or other federal purposes.</p> <p>Their disposal will serve important public objectives.</p>  |
| 5. RIGHTS-OF-WAY             | <p>Alternatives for Rights-of-Way will focus upon utility and communication site corridor locations and boundaries.</p>   | <p>Assess physical effects and constraints on corridor placement or rights-of-way placed therein due to geology, soil, or land forms.</p> <p>Evaluate the economic efficiency of placing a right-of-way within a corridor. Assess the engineering and technological compatibility of proposed and existing facilities.</p> | <p>Public land exchanges must:</p> <p>involve lands in the same state,</p> <p>benefit federal resource management programs.</p> <p>the preferred alternative should minimize adverse economic, environmental and engineering impacts and the proliferation of separate utility and communication site rights-of-way on public lands in the district.</p> |

## APPENDIX A-2: PLANNING CRITERIA FOR THE YUMA DISTRICT RMP-EIS (Cont.)

| PLANNING<br>ISSUE | CRITERIA FOR<br>DEVELOPING ALTERNATIVES   | CRITERIA FOR ESTIMATING<br>THE EFFECTS OF ALTERNATIVES | CRITERIA FOR SELECTING<br>THE PREFERRED ALTERNATIVE  |
|-------------------|---|--|--|
| 6. RECREATION     | <p>Alternatives for Recreation will include:</p> <p>designating public lands as either open, limited, or closed to off-road vehicles for the purpose of resolving management problems (43 CFR 8342.1),</p> <p>ensuring the continued availability of outdoor recreation opportunities which the public seeks and which are not readily available from other public or private entities,</p> <p>establishing management strategies to reduce or eliminate recreation-related resources degradation,</p> <p>meeting the legal requirements for visitor health and safety by providing essential services and supervision,</p> <p>mitigating significant resource user conflicts involving recreation where possible,</p> <p>delineating those public land areas where recreation facilities (e.g., campground, picnic sites, sanitation facilities, trails, and information displays) will be provided,</p> <p>delineating public land areas where long-term winter occupancy will be allowed,</p> <p>establishing a maximum camping time period (e.g., "length-of-stay") for developed camping facilities and undeveloped areas.</p> | See General Criteria.                                  | <p>The Preferred alternative must:</p> <p>provide dispersed and resource dependent types of outdoor recreation with cost-effective use of public lands,</p> <p>provide recreation opportunities not available from other public or private entities,</p> <p>reduce or eliminate resource damage, visitor health and safety problems, and significant resource user conflicts involving recreation.</p> |

## APPENDIX B

# WILDERNESS STUDY AREAS IN YUMA DISTRICT

Table B-1 below lists WSAs in the Yuma District, WSA acreage studied in the draft RMP-EIS and WSA acreage now. See *Issue 7: Wilderness* for a full explanation of how BLM will address the Yuma District WSAs.

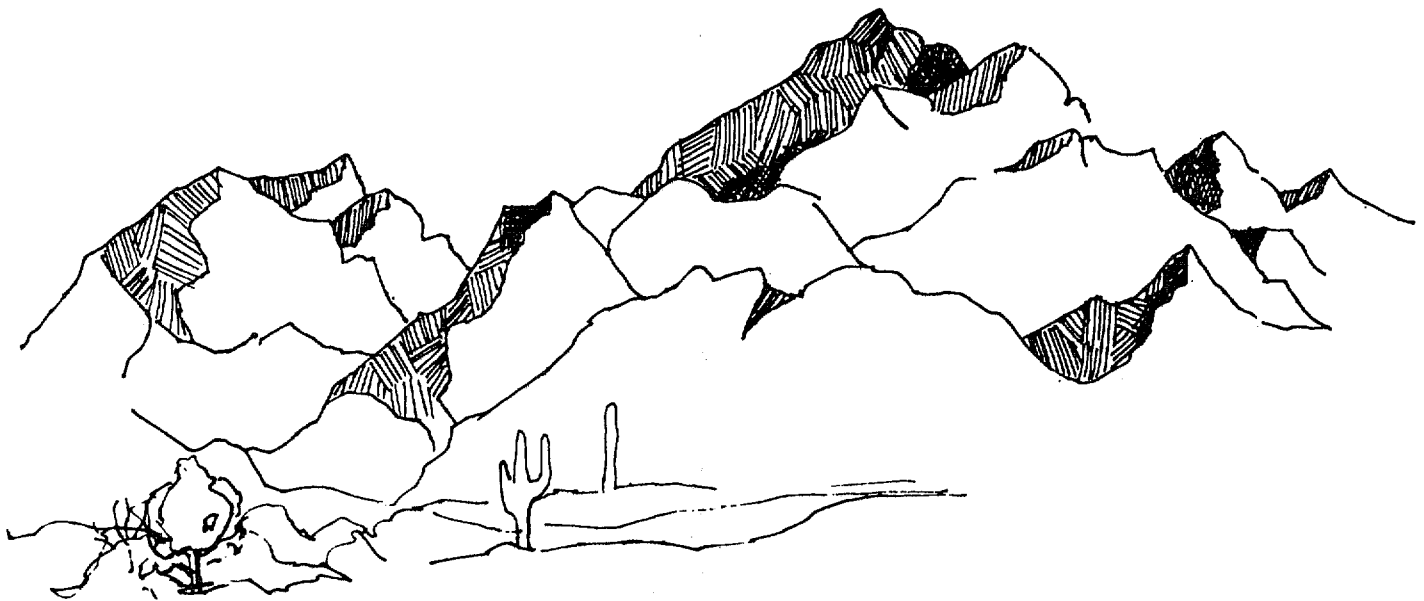


TABLE B-1: WILDERNESS STUDY AREAS  
Bureau of Land Management, Yuma District

| Wilderness Study Area |                                       | Acreage             | Acreage Studied<br>in Draft RMP-EIS |
|-----------------------|---------------------------------------|---------------------|-------------------------------------|
| Number                | Name                                  |                     |                                     |
| 5-1                   | Dead Mountains Northern Addition      | 1,815               | 1,815                               |
| 5-2                   | Dead Mountains Southern Addition      | 630                 | 630                                 |
| 5-3                   | Chemehuevi Mountains Addition         | 195                 | 195                                 |
| 5-4                   | Chemehuevi/Needles Addition           | 960                 | 960                                 |
| 5-5B                  | Needles Eastern Addition              | 465                 | *                                   |
| 5-7B                  | Crossman Peak                         | 38,630 <sup>a</sup> | 22,915                              |
| 5-7C <sup>b</sup>     | Mohave Wash                           | 104,605             | *                                   |
| 5-10                  | Whipple Mountains Addition            | 1,380               | 1,380                               |
| 5-12                  | Gibraltar Mountain                    | 25,260 <sup>a</sup> | 7,870                               |
| 5-13                  | Planet Peak                           | 17,645              | *                                   |
| 5-14A/B               | Cactus Plain                          | 70,360              | 70,360                              |
| 5-15A                 | Swansea                               | 41,690 <sup>a</sup> | 19,370                              |
| 5-17                  | East Cactus Plain                     | 13,735              | 13,735                              |
| 5-18                  | Big Maria Mountains Northern Addition | 415                 | 415                                 |
| 5-19                  | Big Maria Mountains Southern Addition | 1,420               | 1,420                               |
| 5-23A                 | South Trigo Mountains                 | 4,500               | 4,500                               |
| 5-23B                 | Trigo Mountains                       | 36,870              | 36,870                              |
| 5-31                  | Kofa Unit 3 Southern Addition         | 3,400               | 3,400                               |
| 5-33                  | Kofa Unit 4 Northern Addition         | 1,900               | 1,900                               |
| 5-34                  | Kofa Unit 4 Southern Addition         | 11,220              | *                                   |
| 5-35                  | Little Picacho Peak Addition          | 2,915               | 2,915                               |
| 5-53A                 | Muggins Mountains                     | <u>14,455</u>       | <u>14,455</u>                       |
| TOTAL                 |                                       | 394,465             | 205,105                             |

\*WSA not studied in draft RMP-EIS due to 1982 Secretarial decision to drop areas from wilderness review.

<sup>a</sup> Part of this WSA not studied in draft RMP-EIS due to 1982 Secretarial decision.

<sup>b</sup> The full number for this WSA is 5-7C/5-48/2-52.

Source: BLM, Yuma District Office, 1985.

# APPENDIX C

## SUMMARY OF COLORADO RIVER FLOODPLAINS-RELATED PORTIONS OF YUMA RMP-EIS

### Introduction

This appendix summarizes the issues that affect the proposed uses of the Lower Colorado River floodplain. Three planning issues — wildlife habitat, land ownership adjustments and recreation — are briefly stated below followed by a discussion of the alternatives and consequences of these alternatives. The evaluation of the six alternatives and the resulting decisions made in the RMP will have a major effect on how BLM would manage uses of the Lower Colorado River floodplain.

The Bureau of Reclamation (BR) is responsible for operation of the Lower Colorado River system. This includes regulation of river flows below Hoover Dam in order to provide flood protection, water storage and power generation (in priority order). It is BLM's responsibility to manage Bureau of Reclamation withdrawn and acquired lands in the Lower Colorado River floodplain in a manner consistent with BR's needs. Therefore, all of the proposed uses of public lands along the Colorado River would be consistent with BR's maximum target releases and appropriate state, federal and local floodplain legislation.

### Issues - Assumptions and Conditions

- 1) Actions taken by BLM to maintain or improve wildlife habitat in riparian areas along the Colorado River will affect the uses made on the floodplain. Wildlife habitat improvements will generally benefit the natural floodplain values by increasing the kind and amount of plant species along the river.
- 2) Should BLM continue to use the Colorado River floodplain for irrigated agriculture? Approximately 40% (1,670 acres) of the current agricultural leases and permits issued by BLM occur inside the Colorado River levee system.
- 3) What type of recreation use should be made in the Colorado River floodplain? Recreation management along the Colorado River has been a priority use of public lands. Table C-1 shows the existing facilities in or along portions of the Colorado River 100-year floodplain.

### Floodplain Management Standards Common to All Alternatives

BLM's Floodplain Manual 7221 was published in the *Federal Register* on March 15, 1979 (44 F. R. 15786). This manual provides BLM policy, responsibilities and procedures for implementing Executive Order 11988. The Executive Order provides federal agencies with their responsibility for complying with the *National Flood Insurance Act of 1968*, the *National Environmental Policy Act of 1969* and the *Flood Disaster Protection Act of 1973*.

Any actions that would potentially affect the Colorado River operating zone will be evaluated using BLM's planning and environmental assessment process. Part of this process will include early public notification and public participation. BLM intends to comply with the standards developed by the Federal Emergency Management Agency (FEMA) for the National Flood Insurance Program (NFIP) when evaluating new or existing development that will occur in the operating zone of the Lower Colorado River.

It is BLM's policy to provide sound and timely management of the public lands bordering the Colorado River. BLM does recognize that certain beneficial uses can be made in the base (100-year) floodplain, including day-use recreation areas, agriculture and overnight camping in some places.

BLM's goal is to provide safe, prosperous, rewarding short and long-term use of public lands bordering the Colorado River while remaining consistent with the operation requirements of the BR. When development does occur within the base floodplain, BLM's objectives will be to:

- 1) Reduce the risk of flood loss and property damage
- 2) Minimize the impact of flood loss on human health, safety and welfare
- 3) Restore, maintain and reserve the natural and beneficial functions of the floodplain

### Floodplain Uses and Impacts By Alternative

This section summarizes the proposed uses of the base floodplain described in Chapter 2 (*Alternatives*) and 4 (*Environmental Consequences*) for all six alternatives in Yuma District's RMP-EIS.



TABLE C-1: RECREATION SITES AND FACILITIES  
IN THE COLORADO RIVER FLOODPLAIN  
Bureau of Land Management, Yuma District

| Name of<br>Recreation Site                  | Acres<br>Within<br>Floodplain | Number<br>of RV<br>Sites | Number of Campsites |             | Other Facilities  |
|---|-------------------------------|--------------------------|---------------------|-------------|---|
|   |                               |                          | Developed           | Undeveloped |   |
| CONCESSIONS                                 |                               |                          |                     |             |   |
| 1. Sunshine Resort                          | 5                             | 23*                      | --                  | 22          | Cabin, sheds  |
| 2. River Lodge                              | 25                            | 33*                      | --                  | 30          | Bath houses (2)   |
| 3. River Lodge Too                          | 5                             | 25*                      | --                  | 17          | Sheds, gas pumps and tanks,<br>boat storage*, boat service*   |
| 4. Californian                              | **                            | --                       | --                  | 15          | ---   |
| 5. Big Bend                                 | 5                             | --                       | 30                  | --          | Store, bath house, gas pumps  |
| 6. Echo Lodge                               | 15                            | 49                       | 120                 | --          | Snack shop, ski shop, bath<br>house, gas pumps  |
| 7. River Land Resort                        | 5                             | --                       | 40                  | --          | Boat repair shop  |
| 8. Walters Camp                             | 5                             | --                       | --                  | --          | Store, bait/tackle shop, gas<br>pumps and tanks*  |
| Subtotal                                    | 65                            | 130                      | 190                 | 84          |   |
| STATE PARKS                                 |                               |                          |                     |             |   |
| 1. Buckskin Mountain,<br>(AZ)               | 10                            | --                       | 3                   | --          | Store, sewage treatment<br>facility, irrigation systems   |
| 2. Picacho State<br>Recreation Area<br>(CA) | 610                           | --                       | 25                  | --          | Park Office, campfire circle  |
| Subtotal                                    | 620                           | 0                        | 28                  | --          |   |
| CITY AND COUNTY<br>LEASE AREAS              |                               |                          |                     |             |   |
| 1. Needles Marina                           | 50***                         | 188                      | --                  | --          | 31 mobile home sites, store/<br>office, restrooms w/showers<br>(2), laundry, swimming pool,<br>storage area, check-in<br>building, RV sewage dump<br>station, golf course pro shop,<br>marina w/106 slips |
| 2. Park Moabi                               | 10                            | 10                       | 21                  | 40          | Store/boat shop, employee<br>residences (2), garage, horse<br>corral, restrooms (3), picnic<br>ramadas (3), irrigation system,<br>electrical systems  |
| 3. La Paz County Park                       | 30                            | --                       | --                  | --          | Cabanas (4), electrical<br>system, water system   |
| Subtotal                                    | 90                            | 198                      | 21                  | 40          |   |
| TOTAL                                       | 775                           | 328                      | 239                 | 154         |   |

\* Proposed facilities.

\*\* Area is less than one acre.

\*\*\* Area is within Colorado River Floodway (river channel during a 100-year flood).

Source: BLM, Yuma District Office files, 1983.

### Preferred Alternative

With the exception of Pittsburg Point which BLM would make available for disposal (see Chapter 2, *Preferred Alternative*), recreation lands along the Colorado River would be retained in federal ownership to ensure that public opportunities for Colorado River recreation

continue to be available in the future. Along the Parker Strip, only floodproofed day-use facilities would be allowed within the 100-year base floodplain. BLM's long-term intent would be to move overnight recreational use and associated development out of the base floodplain. On the rest of the Colorado River, only those permanent facilities that are floodproofed would be allowed in the

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100-year floodplain. Existing permanent structures would be allowed to remain in the 100-year floodplain until they are substantially damaged by flooding, their useful life is gone, an applicable part of the lease is renegotiated or the lease expires.

About 23,100 acres of Colorado, Bill Williams and Gila River floodplain would be managed as priority riparian wildlife habitat. This would benefit natural floodplain functions by maintaining channel stability and providing areas to filter sediment.

Agricultural lands located in the Colorado River floodplain would continue to be farmed until the Central Arizona Project (CAP) begins operating or the present leases and permits expire. New leases would be issued under 43 CFR 2920 regulations for those lands having legal water rights in compliance with state water law and the Colorado River adjudication. The existing agricultural leases and permits that are not in compliance with state water law would be cancelled and managed for recreation and/or wildlife values.

### Alternative A - No Action

Recreation lands on the Yuma District would be retained in federal ownership to ensure that public opportunities for Colorado River recreation would continue. All existing recreation facilities on the Colorado River floodplain would continue to be allowed. Facilities that are not already floodproofed to acceptable (NFIP) standards would be brought to standards or moved from the floodplain when the leases expire, are modified or when the development is substantially damaged by flooding.

About 23,100 acres of Colorado, Bill Williams and Gila River floodplain would be managed as priority riparian wildlife habitat. This would benefit natural floodplain functions by maintaining channel stability and providing areas to filter sediment.

Agricultural lands in the floodplain would be managed the same way as described in the *Preferred Alternative*.

### Alternative B - Resource Production

Under *Alternative B*, only those new and existing permanent facilities that can be floodproofed would be allowed within the 100-year floodplain. Those facilities that are not already or cannot be floodproofed would be relocated outside of the 100-year floodplain. Additional public lands would be provided to concessions for this purpose. Additional developments would be evaluated in the NEPA process, would be consistent with the state, federal and local floodplain ordinances, and would require modification of the existing leases.

Riparian areas and wildlife habitat are not priorities under this alternative. Consequently, floodplain values would not benefit from these programs.

Agricultural lands in the floodplain would be managed in the same manner as described in the *Preferred Alternative*.

### Alternative C - Balanced Resource Use, Production

Recreational management in the floodplain would be the same as described in *Alternative B*.

Approximately 23,100 acres of Colorado, Bill Williams and Gila River floodplain would be managed as priority riparian wildlife habitat. This would benefit the natural floodplain values by maintaining channel stability and providing areas for filtering sediment.

Agricultural lands in the floodplain would be managed in the same manner as described in the *Preferred Alternative*.

### Alternative D - Balanced Resource Use, Protection

Under this alternative, only day-use floodproofed recreation facilities would be allowed within the 100-year floodplain. All other facilities and structures would be relocated outside the floodplain. The vacated areas would be converted for day-use recreation. These proposed changes would occur through renegotiation or expiration of leases. Moving these facilities out of the base floodplain would increase public access to the river in the long term.

Approximately 23,100 acres of Colorado, Bill Williams and Gila River floodplain would be managed as priority riparian wildlife habitat. This would benefit the natural floodplain values by maintaining channel stability and providing areas for filtering sediment.

Agricultural lands in the floodplain would be managed in the same manner as described in the *Preferred Alternative*.

### Alternative E - Resource Protection

Under *Alternative E*, all existing recreation facilities would be removed from the base floodplain through cancellation or expiration of leases. All base floodplains would be managed as wildlife and riparian habitat. This action would restore floodplain values on about 65 acres. BLM would also remove its recreation facilities from the base floodplain.

Approximately 23,100 acres of Colorado, Bill Williams and Gila River floodplain would be managed as priority riparian wildlife habitat. This would benefit the natural floodplain values by maintaining channel stability and providing areas for filtering sediment.

All leases and permits on agricultural lands (1,670 acres) located in the base floodplain would be terminated when the leases expire. The lands would be managed for wildlife habitat.

# APPENDIX D

## AGRICULTURAL PERMITS AND LEASES IN YUMA DISTRICT

TABLE D-1: AGRICULTURAL PERMITS  
Bureau of Land Management, Yuma District

| Name                             | Permits<br>Serial<br>No. | Location                                 | Water Use (land acres) and Source |                   |       |                | BLM-Administered Lands Under<br>Permit or Lease (Acres) |                      |                  |
|----------------------------------|--------------------------|--|-----------------------------------|-------------------|-------|----------------|---|----------------------|------------------|
|                                  |                          |  | None                              | Colorado<br>River | Wells | I.D.*          | Total   | Inside<br>Floodplain | Outside<br>Levee |
| <sup>a</sup> Beals               | 1A-26(A)                 | Sec. 11;<br>T. 11 S., R. 25 W.           | -                                 | -                 | -     | 33<br>(YCWUA)  | 33.0  | 33.0                 | -                |
| <sup>a</sup> Musgrove            | 1A-29(A)                 | Sec. 11;<br>T. 11 S., R. 25 W.           | -                                 | -                 | -     | 10<br>(YCWUA)  | 10.0  | -                    | 10.0             |
| <sup>a</sup> Donley              | 1A-28(A)                 | Sec. 30;<br>T. 9 S., R. 24 W.            | -                                 | -                 | -     | 11<br>(YCWUA)  | 11.0  | 11.0                 | -                |
| <sup>a</sup> Donley              | 1A-27(A)                 | Sec. 8;<br>T. 9 S., R. 24 W.             | -                                 | -                 | -     | 5<br>(YCWUA)   | 5.0   | 5.0                  | -                |
| <sup>a</sup> Wohlford            | 1A-30(A)                 | Sec. 28;<br>T. 8 S., R. 24 W.            | -                                 | -                 | -     | 1.1<br>(YCWUA) | 1.1   | -                    | 1.1              |
| <sup>a</sup> Hulsey              | 1A-22(A)                 | Sec. 2, 3, 10, 11;<br>T. 11 S., R. 25 W. | -                                 | -                 | 82.8  | -              | 82.8  | 82.8                 | -                |
| <sup>a</sup> Quon                | 1A-23(A)                 | Sec. 2, 11;<br>T. 11 S., R. 25 W.        | -                                 | -                 | 148.7 | -              | 148.7   | 148.7                | -                |
| <sup>a</sup> Hughes              | 1A-7(A)                  | Sec. 3;<br>T. 11 S., R. 25 W.            | -                                 | -                 | 88.5  | -              | 88.5  | 88.5                 | -                |
| <sup>a</sup> Brown               | 1A-6(A)                  | Sec. 2 & 3;<br>T. 11 S., R. 25 W.        | -                                 | -                 | 130.0 | -              | 130.0   | 130.0                | -                |
| <sup>a</sup> Bethune             | 1A-1(A)                  | Sec. 23;<br>T. 10 S., R. 25 W.           | -                                 | -                 | 50.0  | -              | 50.0  | 50.0                 | -                |
| <sup>a</sup> Cuming Bros.        | 1A-17(A)                 | Sec. 23;<br>T. 10 S., R. 25 W.           | -                                 | 57.5              | -     | -              | 57.5  | 57.5                 | -                |
| <sup>a</sup> Beck<br>(Estate of) | 1A-2(A)                  | Sec. 14, 23;<br>T. 10 S., R. 25 W.       | -                                 | 14.0              | -     | -              | 14.0  | 14.0                 | -                |
| <sup>a</sup> Sibley              | 1A-4(A)                  | Sec. 2, 11;<br>T. 10 S., R. 25 W.        | -                                 | -                 | 177.5 | -              | 177.5   | 177.5                | -                |
| <sup>a</sup> Sibley              | 1A-8(A)                  | Sec. 14;<br>T. 10 S., R. 25 W.           | -                                 | 68.0              | -     | -              | 68.0  | 68.0                 | -                |
| <sup>a</sup> Jessen              | 1A-3(A)                  | Sec. 32, 33;<br>T. 8 S., R. 24 W.        | -                                 | 6.5               | -     | -              | 6.5   | 6.5                  | -                |
| <sup>c</sup> Youmans             | 2A-10(A)                 | Sec. 19;<br>T. 8 S., R. 22 W.            | 65                                | -                 | -     | -              | 65.0  | 65.0                 | -                |
| Harrison                         | 2A-22(A)                 | Sec. 14 & 15<br>T. 7 S., R. 22 W.        | -                                 | -                 | -     | 33<br>(NVID)   | 33.0  | 33.0                 | -                |
| <sup>b</sup> Pratt               | 3AC-1(A)                 | Sec. 14;<br>T. 7 S., R. 22 W.            | -                                 | -                 | 75.0  | -              | 75.0  | 75.0                 | -                |
| <sup>a, d</sup> Barkley          | 1A-18(A)                 | Sec. 34, 35;<br>T. 10 S., R. 25 W.       | -                                 | -                 | 34.0  | -              | 34.0  | 34.0                 | -                |
| Crews                            |                          | Sec. 2;<br>T. 10 S., R. 25 W.            | -                                 | -                 | -     | 11<br>(CID)    | 11.0  | -                    | 11.0             |

# APPENDICES

TABLE D-1: AGRICULTURAL PERMITS (Cont'd)

| Name                | Permits    |                                   | Water Use (land acres) and Source |          |       |               | BLM-Administered Lands Under Permit or Lease (Acres) |                   |               |
|---------------------|------------|-----------------------------------|-----------------------------------|----------|-------|---------------|--|-------------------|---------------|
|                     | Serial No. | Location                          | None                              | Colorado |       |               | Total  | Inside Floodplain | Outside Levee |
|                     |            |                                   |                                   | River    | Wells | I.D.*         |  |                   |               |
| <sup>d</sup> Curtis | 1A-15(A)   | Sec. 29;<br>T. 16 S., R. 22 W.    | -                                 | 27.0     | -     | -             | 27.0   | 27.0              | -             |
| <sup>d</sup> Ogram  | 2A-2(A)    | Sec. 24;<br>T. 8 S., R. 23 W.     | -                                 | -        | 31.0  | 13<br>(SGVID) | 44.0   | 31.0              | 13.0          |
| <sup>d</sup> Church | 2A-5(A)    | Sec. 19;<br>T. 8 S., R. 22 W.     | -                                 | -        | -     | 24<br>(NGVID) | 24.0   | 24.0              | -             |
| <sup>c</sup> Oldham | 4A-41(A-C) | Sec. 7;                           | -                                 | -        | -     | -             | 2.5  | -                 | 2.5           |
| <sup>c</sup> Aitken | 7A-17(A)   | Sec. 19;<br>T. 17 N., R. 21 W.    | 50                                | -        | -     | -             | 50.0   | 50.0              | -             |
| Chesney             | 7A-16(A)   | Sec. 19;<br>T. 17 N., R. 21 W.    | 9                                 | 86.0     | -     | -             | 95.0   | 95.0              | -             |
| Stanfield           | 4C-10(A)   | Sec. 33;<br>T. 8 S., R. 22 E.     | -                                 | -        | -     | 40            | 40.0   | 40.0              | -             |
| Baker               | 4C-14(A)   | Sec. 12;<br>T. 9 S., R. 21 E.     | 50                                | -        | -     | 129           | 179.0  | 179.0             | -             |
| Ehlers              | 4C-8(A)    | Sec. 34, 35;<br>T. 2 N., R. 23 W. | 7                                 | -        | -     | 254           | 261.0  | -                 | 261.0         |
| Schindler           |            | Sec. 24;<br>T. 8 S., R. 22 W.     | 2                                 | -        | -     | 77            | 79.32  | -                 | 79.32         |
| Rothenberger        | 4C-7(A)    | Sec. 34, 35;<br>T. 2 N., R. 23 W. | 3                                 | -        | -     | 81            | 84.0   | -                 | 84.0          |
| TOTAL PERMITS       |            |                                   |                                   |          |       |               | 1,987.42   | 1,525.5           | 461.92        |

a - Located in Arizona south of Morelos Dam.

b - Currently have no legal source of water for irrigating lands.

c - Operation/use on this permit does not require water.

d - Unauthorized agricultural use of BLM-administered lands, i.e., no lease or permit agreement exists on these lands.

\*I.D. refers to Irrigation Districts (i.e. Yuma County Water Users Association (YCWUA), North Gila Valley (NGVID), Cibola (CID), South Gila Valley (SGVID).

Source: BLM, Yuma District Office files, 1985.

TABLE D-2: AGRICULTURAL LEASES  
Bureau of Land Management, Yuma District

| BLM-Administered Lands Under Permit or Lease (Acres) |            |  |                  |                                   |                |       |       |         |                   |               |
|--|------------|--|------------------|-----------------------------------|----------------|-------|-------|---------|-------------------|---------------|
| Leases   |            |  | Lease Expiration | Water Use (land acres) and Source |                |       |       | Total   | Inside Floodplain | Outside Levee |
| Name   | Serial No. | Location                                 |                  | None                              | Colorado River | Wells | I.D.  |         |                   |               |
| Embry  | Y-0012     | Sec. 28;<br>T. 16 S., R. 22 E.           | 1983             | -                                 | -              | 67    | -     | 67.0    | 67.0              | -             |
| Hull   | Y-0014C    | Sec. 35;<br>T. 8 S., R. 22 E.            | 1985             | 8.7                               | -              | -     | 156   | 164.7   | -                 | 164.7         |
| Desert Ginning Co.                                   | Y-0121C    | Sec. 2, 3, 4, 9, 10<br>T. 9 S., R. 22 R. | 1988             | 6.0                               | -              | -     | 896   | 902.0   | 50.0              | 852.0         |
| Beaver Bros.   | Y-0122C    | Sec. 4, 5, 8, 9;<br>T. 9 S., R. 22 E.    | 1989             | 185.0                             | -              | -     | 675   | 860.0   | 30.0              | 830.0         |
| Japatul, Inc.  | Y-0328C    | Sec. 25;<br>T. 9 S., R. 21 E.            |                  | -                                 | -              | -     | 224.8 | 224.8   | -                 | 224.8         |
| TOTAL LEASES   |            |  |                  |                                   |                |       |       | 2218.5  | 147.0             | 2071.5        |
| GRAND TOTAL (Permits and Leases)                     |            |  |                  |                                   |                |       |       | 4205.92 | 1672.51           | 2533.42       |

<sup>a</sup>Currently have no legal source of water for irrigating lands.

# APPENDIX E

## FEDERAL AND STATE LISTED WILDLIFE SPECIES IN THE YUMA DISTRICT

| SPECIES  | LISTING STATUS   | ABUNDANCE                            |
|--|--|--------------------------------------|
| <b>Mammals</b>   |  |                                      |
| SPOTTED BAT<br>( <i>Euderma maculata</i> )   | Arizona State: Not included<br>California State: Not included<br>Federal: Candidate, Category 2  | Rare                                 |
| RIVER OTTER<br>( <i>Lutra canadensis</i> )   | Arizona State: Group II (Endangered)<br>California State: Not included<br>Federal: Not included  | Probably Extinct in<br>Yuma District |
| DESERT BIGHORN SHEEP<br>( <i>Ovis canadensis mexicana</i> and<br><i>O.c. nelsoni</i> ) | Arizona State: Group III (Threatened)<br>California State: Not included                          | Locally common                       |
| YUMA PUMA<br>( <i>Felis concolor browni</i> )  | Arizona State: Not included<br>California State: Not included<br>Federal: Candidate, Category 2  | Rare                                 |
| <b>Birds</b>   |  |                                      |
| GREAT EGRET<br>( <i>Casmerodius albus</i> )  | Arizona State: Group IV<br>California State: Not included<br>Federal: Not included               | Uncommon                             |
| CALIFORNIA YELLOW-BILLED<br>CUCKOO<br>( <i>Coccyzus americanus occidentalis</i> )      | Arizona State: Not included<br>California State: Rare<br>Federal: Candidate, Category 2          | Uncommon                             |
| SNOWY EGRET<br>( <i>Egretta thula</i> )  | Arizona State: Group IV<br>California State: Not included<br>Federal: Not included               | Uncommon                             |
| PEREGRINE FALCON<br>( <i>Falco peregrinus</i> )  | Arizona State: Group III (Threatened)<br>California State: Endangered<br>Federal: Endangered     | Rare                                 |
| BALD EAGLE<br>( <i>Haliaeetus leucoccephalus</i> )                                     | Arizona State: Group II (Endangered)<br>California State: Endangered<br>Federal: Endangered      | Rare                                 |
| CALIFORNIA BLACK RAIL<br>( <i>Laterallus jamaicensis coturniculus</i> )                | Arizona State: Group II (Endangered)<br>California State: Rare<br>Federal: Candidate, Category 2 | Uncommon                             |
| BLACK-CROWNED NIGHT HERON<br>( <i>Nycticorax nycticorax</i> )                          | Arizona State: Group IV<br>California State: Not included<br>Federal: Not included               | Uncommon                             |
| OSPREY<br>( <i>Pandion haliaetus</i> )   | Arizona State: Group III (Threatened)<br>California State: Not included<br>Federal: Not included | Uncommon                             |
| CALIFORNIA BROWN PELICAN<br>( <i>Pelecanus occidentalis californicus</i> )             | Arizona State: Not included<br>California State: Endangered<br>Federal: Endangered               | Infrequent visitor                   |
| YUMA CLAPPER RAIL<br>( <i>Rallus longirostris yumanensis</i> )                         | Arizona State: Group III (Threatened)<br>California State: Rare<br>Federal: Endangered           | Locally common                       |

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|   |   |  |
|---|---|--|
| CALIFORNIA LEAST TERN<br>( <i>Sterna albifrons browni</i> )           | Arizona State: Not included<br>California State: Endangered<br>Federal: Endangered                        | Accidental                               |
| MOUNTAIN PLOVER<br>( <i>Charadrius montanus</i> )                     | Arizona State: Not included<br>California State: Not included<br>Federal: Candidate, Category 2           | Rare                                     |
| BELLS VIREO<br>( <i>Vireo belli</i> )                                 | Arizona State: Not included<br>California State: Endangered<br>Federal: Candidate, Category 3             | Rare                                     |
| <b>Amphibians and Reptiles</b>  |   |  |
| DESERT TORTOISE<br>( <i>Gopherus agassizi</i> )                       | Arizona State: Group III (Threatened)<br>California State: Not included<br>Federal: Candidate, Category 2 | Uncommon                                 |
| GILA MONSTER<br>( <i>Heloderma suspectum</i> )                        | Arizona State: Not included<br>California State: Not included<br>Federal: Candidate, Category 2*          | Rare                                     |
| FLAT-TAILED HORNED LIZARD<br>( <i>Phrynosoma m'calli</i> )            | Arizona State: Group III (Threatened)<br>California State: Not included<br>Federal: Candidate, Category 2 | Uncommon                                 |
| FRINGE-TOED LIZARD<br>( <i>Uma notata</i> and<br><i>U. scoparia</i> ) | Arizona State: Group III (Threatened)<br>California State: Not included<br>Federal: Candidate, Category 2 | Locally common                           |
| <b>Fish</b>   |   |  |
| BONYTAIL CHUB<br>( <i>Gila elegans</i> )                              | Arizona State: Group II (Endangered)<br>California State: Endangered<br>Federal: Endangered (proposed)    | Probably extinct in lower Colorado River |
| WOUNDFIN<br>( <i>Plagopterus argentissimus</i> )                      | Arizona State: Group II (Endangered)<br>California State: Not native<br>Federal: Endangered               | Extinct in lower Colorado River          |
| GILA TOPMINNOW<br>( <i>Poeciliopsis occidentalis</i> )                | Arizona State: Group III (Threatened)<br>California State: Not native<br>Federal: Endangered              | Extinct in Lower Colorado River          |
| COLORADO RIVER SQUAWFISH<br>( <i>Ptychocheilus lucius</i> )           | Arizona State: Group I (Extirpated)<br>California State: Endangered<br>Federal: Endangered                | Extinct in lower Colorado River          |
| RAZORBACK (HUMPBACK) SUCKER<br>( <i>Xyrauchen texanus</i> )           | Arizona State: Group III (Threatened)<br>California State: Endangered<br>Federal: Candidate, Category 2   | Rare                                     |

Sources: *Federal Threatened and Endangered Wildlife Species List*, amended 1985; *Threatened and Unique Wildlife of Arizona*, amended 1985; *California Endangered and Rare Fish and Wildlife*, amended 1985.

## APPENDIX F

### ANIMAL AND PLANT SPECIES MENTIONED IN THE RMP-EIS

Plant species in Yuma District (listed in Table F-1 below) are described in Chapter 3 (*Affected Environment*)

under Vegetation Resources. Animal species (listed in Table F-2) and their habitat are described in Chapter 3 under Wildlife.

**Table F-1: SCIENTIFIC AND COMMON NAMES OF PLANT  
SPECIES IN THE YUMA DISTRICT**  
Bureau of Land Management, Yuma District

| SCIENTIFIC NAME                         | COMMON NAME             | SCIENTIFIC NAME                     | COMMON NAME               |
|---|-------------------------|-------------------------------------|---------------------------|
| <i>Abronia villosa</i>                  | sand verbena            | <i>Koeberlinia spinosa</i>          | crucifixion thorn         |
| <i>Acacia greggii</i>                   | catclaw acacia          | <i>Krameria</i> spp.                | ratany                    |
| <i>Agave</i> spp.                       | Agave                   | <i>Larrea tridentata</i>            | creosotebush              |
| <i>Amaryllidaceae</i>                   | <i>Amaryllis</i> family | <i>Liliaceae</i>                    | <i>Lily</i> family        |
| <i>Ambrosia deltoidea</i>               | burrobush               | <i>Lupinus</i> spp.                 | lupine                    |
| <i>Ambrosia dumosa</i>                  | white bursage           | <i>Lycium</i> spp.                  | desert thorn              |
| <i>Ammobroma sonora</i>                 | sandfood                | <i>Mentzelia nitens leptocaulis</i> | unnamed stick leaf        |
| <i>Antirrhinum filipes</i>              | snapdragon              | <i>Muhlenbergia porteri</i>         | bush muhly                |
| <i>Atriplex hymenelytra</i>             | desert holly            | <i>Nemacaulis denudata</i>          | woolly heads              |
| <i>Atriplex</i> spp.                    | saltbush                | <i>Nolina bigelovii</i>             | Nolina                    |
| <i>Bursera microphylla</i>              | elephant tree           | <i>Olneya tesota</i>                | ironwood                  |
| <i>Canotia holacantha</i>               | canotia                 | <i>Opuntia basilaris</i>            | beavertail cactus         |
| <i>Carnegiea gigantea</i>               | saguaro                 | <i>Opuntia</i> spp.                 | Opuntia                   |
| <i>Cercidium floridum</i>               | blue palo verde         | <i>Opuntia wigginsii</i>            | Wiggins cholla            |
| <i>Cercidium microphyllum</i>           | foothill palo verde     | <i>Palafoxia arida gigantea</i>     | giant Spanish needle      |
| <i>Cereus greggii</i>                   | night-blooming cereus   | <i>Parkinsonia aculeata</i>         | Jerusalem-thorn           |
| <i>Coleogyne ramosissima</i>            | blackbrush              | <i>Pholisma arenarium</i>           | scaly sandplant           |
| <i>Coryphantha vivipara alversonii</i>  | foxtail cactus          | <i>Phragmites communis</i>          | carrizo                   |
| <i>Crassulaceae</i>                     | <i>Orpine</i> family    | <i>Pinus</i> spp.                   | pine                      |
| <i>Cynodon dactylon</i>                 | Bermuda grass           | <i>Plantago</i> spp.                | Indian wheat              |
| <i>Dalea spinosa</i>                    | smoke tree              | <i>Pluchea sericea</i>              | arrowweed                 |
| <i>Datura meteloides</i>                | sacred datura           | <i>Polygonum fusiforme</i>          | unnamed smartweed         |
| <i>Encelia farinosa</i>                 | brittlebush             | <i>Populus fremontii</i>            | cottonwood                |
| <i>Ephedra</i> spp.                     | joint fir               | <i>Prosopis glandulosa</i>          | mesquite                  |
| <i>Equisetum</i> spp.                   | horsetail               | <i>Prosopis juliflora</i>           | honey mesquite            |
| <i>Eriogonum</i> spp.                   | buckwheat               | <i>Prosopis pubescens</i>           | screwbean mesquite        |
| <i>Eschscholtzia mexicana</i>           | California poppy        | <i>Rhus kearneyi</i>                | Kearney's sumac           |
| <i>Euphorbia platysperma</i>            | flat-seeded spurge      | <i>Salix</i> spp.                   | willow                    |
| <i>Euphorbia polycarpa</i>              | sandmat                 | <i>Sarcobatus vermiculatus</i>      | greasewood                |
| <i>Ferocactus acanthodes acanthodes</i> | barrel cactus           | <i>Scirpus</i> spp.                 | bulrush                   |
| <i>Ferocactus</i> spp.                  | barrel cactus           | <i>Sphaeralcea</i> spp.             | globe mallow              |
| <i>Fouquieria splendens</i>             | ocotillo                | <i>Stephanomeria schottii</i>       | Schott's wire-lettuce     |
| <i>Helianthus niveus tephrodes</i>      | desert sunflower        | <i>Stillingia linearifolia</i>      | linear-leaved sand spurge |
| <i>Hesperocallis undulata</i>           | desert lily             | <i>Stipa</i> spp.                   | needle grass              |
| <i>Hilaria rigida</i>                   | big galleta grass       | <i>Tamarix</i> spp.                 | saltcedar                 |
| <i>Holacantha emoryi</i>                | crucifixion thorn       | <i>Triteleopsis palmeri</i>         | unnamed lily              |
| <i>Hymenoclea salsola</i>               | cheesebush              | <i>Typha</i> spp.                   | cattail                   |
| <i>Hyptis emoryi</i>                    | desert lavender         | <i>Yucca brevifolia</i>             | Joshua tree               |

SOURCE: BLM 1984

**Table F-2: SCIENTIFIC AND COMMON NAMES OF ANIMAL SPECIES  
MENTIONED IN THE RMP-EIS  
Bureau of Land Management, Yuma District**

| SCIENTIFIC NAME                  |                                | COMMON NAME                     |
|----------------------------------|--------------------------------|---------------------------------|
|                                  | <b>Mammals</b>                 |                                 |
| <i>Antilocapra americana</i>     |                                | Pronghorn antelope              |
| <i>Euderma maculata</i>          |                                | Spotted bat                     |
| <i>Felis concolor browni</i>     |                                | Yuma puma (mountain lion)       |
| <i>Lutra canadensis</i>          |                                | River otter                     |
| <i>Odocoileus hemionus</i>       |                                | Mule deer                       |
| <i>Ovis canadensis</i>           |                                | Desert bighorn sheep            |
| <i>Sylvilagus auduboni</i>       |                                | Desert cottontail               |
|                                  | <b>Birds</b>                   |                                 |
| <i>Accipiter cooperii</i>        |                                | Cooper's hawk                   |
| <i>Accipiter striatus</i>        |                                | Sharp-shinned hawk              |
| <i>Anas platyrhynchos</i>        |                                | Mallard                         |
| <i>Anas strepera</i>             |                                | Gadwall                         |
| <i>Aquila chrysaetos</i>         |                                | Golden eagle                    |
| <i>Branta canadensis</i>         |                                | Canada goose                    |
| <i>Buteo albonotatus</i>         |                                | Zone-tailed hawk                |
| <i>Buteo jamaicensis</i>         |                                | Red-tailed hawk                 |
| <i>Buteogallus anthracinus</i>   |                                | Black hawk                      |
| <i>Callipepla gambelii</i>       |                                | Gambel's quail                  |
| <i>Casmerodius albus</i>         |                                | Great egret                     |
| <i>Charadrius montanus</i>       |                                | Mountain plover                 |
| <i>Circus cyaneus</i>            |                                | Marsh hawk                      |
| <i>Coccyzus americanus</i>       |                                | California yellow-billed cuckoo |
| <i>Egretta thula</i>             |                                | Snowy egret                     |
| <i>Falco mexicanus</i>           |                                | Prairie falcon                  |
| <i>Falco peregrinus</i>          |                                | Peregrine falcon                |
| <i>Falco sparverius</i>          |                                | Kestrel                         |
| <i>Haliaeetus leucocephalus</i>  |                                | Bald eagle                      |
| <i>Laterallus jamaicensis</i>    |                                | California black rail           |
| <i>Nycticorax nycticorax</i>     |                                | Black-crowned night heron       |
| <i>Oxyura jamaicensis</i>        |                                | Ruddy duck                      |
| <i>Pandion haliaetus</i>         |                                | Osprey                          |
| <i>Parabuteo unicinctus</i>      |                                | Harris hawk                     |
| <i>Pelecanus occidentalis</i>    |                                | California brown pelican        |
| <i>Rallus longirostris</i>       |                                | Yuma clapper rail               |
| <i>Sterna albifrons</i>          |                                | California least tern           |
| <i>Tyrannus melancholicus</i>    |                                | Tropical kingbird               |
| <i>Vireo belli</i>               |                                | Bell's vireo                    |
| <i>Zenaida asiatica</i>          |                                | White-winged dove               |
| <i>Zenaida macroura</i>          |                                | Mourning dove                   |
|                                  | <b>Amphibians and Reptiles</b> |                                 |
| <i>Gopherus agassizi</i>         |                                | Desert tortoise                 |
| <i>Heloderma suspectum</i>       |                                | Gila monster                    |
| <i>Hyla regilla</i>              |                                | Pacific tree frog               |
| <i>Phrynosoma m'calli</i>        |                                | Flat-tailed horned lizard       |
| <i>Uma notata</i>                |                                | Fringe-toed lizard              |
|                                  | <b>Fish</b>                    |                                 |
| <i>Gila elegans</i>              |                                | Bonytail chub                   |
| <i>Ictalurus punctatus</i>       |                                | Channel catfish                 |
| <i>Lepomis macrochirus</i>       |                                | Bluegill                        |
| <i>Micropterus salmoides</i>     |                                | Largemouth bass                 |
| <i>Morone saxatilis</i>          |                                | Striped bass                    |
| <i>Pilodictis olivaris</i>       |                                | Flathead catfish                |
| <b>Plagopterus argentissimus</b> |                                | Woundfin                        |
| <i>Poeciliopsis occidentalis</i> |                                | Gila top minnow                 |
| <i>Pomoxis nigromaculatus</i>    |                                | Crappie                         |
| <i>Ptychocheilus lucius</i>      |                                | Colorado River squaw fish       |
| <i>Xyrauchen texanus</i>         |                                | Razorback (humpback) sucker     |

Source: BLM, Yuma District Office files, 1984



# APPENDIX G

## RANGELAND MANAGEMENT

APPENDIX G-1: PERENNIAL-EPHEMERAL ALLOTMENTS IN YUMA DISTRICT  
Bureau of Land Management, Yuma District

| Allotment No. | Allotment Name | Federal Acres | Resource Area | Approximate Percentage in Yuma District | Other Resource Areas Containing Portions of Allotment | Range Improvements in Yuma District Portion |    | Relevant Plan     | Additional Comments   |
|---------------|----------------|---------------|---------------|---|---|---|----|-------------------|---|
|               |                |               |               |   |   | Yes   | No |                   |   |
| 3059          | Nine Mile*     | 111,815       | YRA<br>HRA    | 75                                      | Lower Gila  | X   |    | Yuma District RMP | -Interim AMP<br>-High improvement potential<br>-Proposed for additional cattle (AUMs)<br>-No AMP  |
| 3093          | Muse*          | 134,526       | HRA           | 50                                      | Lower Gila  | X   |    | Yuma District RMP | -No use in past 15 years<br>-No AMP<br>-High improvement potential<br>-No proposed reductions<br>-Ownership being transferred<br>-Alternative category is I |
| 3034          | Ganado*        | 92,250        | HRA           | 100                                     | NA  | X   |    | Yuma District RMP | -No AMP; interim plan in preparation<br>-High improvement potential<br>-No proposed reductions in AUMs  |
| 5001          | Bishop         | 28,069        | NA            | X                                       | NA  | X   |    | Yuma District RMP | -Section 15 lease<br>-Yuma District management responsibility<br>-No change in AUMs<br>-No AMP<br>-10 year lease expires 2/28/89                            |

\* Administered by Lower Gila Resource Area  
Source: BLM, Phoenix District Office files, 1983.

APPENDIX G-2: EPHEMERAL ALLOTMENTS  
Bureau of Land Management, Yuma District

| Allotment No. | Allotment Name                     | Federal Acres | Resource Area | Approximate Percentage in Yuma District | Other Resource Areas Containing Portions of Allotment | Range Improvements in Yuma District Portion |    | Relevant Plan     |
|---------------|------------------------------------|---------------|---------------|---|---|---|----|-------------------|
|               |                                    |               |               |   |   | Yes   | No |                   |
| 65A           | Silver Creek <sup>a</sup>          | 67,154        | HRA           | 5                                       | Kingman   |   | X  | Cerbat/Black      |
| 68A           | Thumb Butte <sup>a</sup>           | 25,458        | HRA           | 5-10                                    | Kingman   |   | X  | Cerbat/Black      |
| 3069          | Primrose                           | 48,486        | HRA           | 10                                      | Kingman   |   | X  | Lower Gila North  |
| 3067          | Planet <sup>b</sup>                | 175,471       | HRA           | 67                                      | Kingman   | X   |    | Yuma District RMP |
| 3088          | Wells                              | 79,024        | YRA           | 100                                     | NA  | X   |    | Yuma District RMP |
| 3075          | Scott                              | 253,244       | YRA           | 75                                      | Lower Gila  | X   |    | Yuma District RMP |
| 3056          | Morton                             | 28,268        | YRA           | 100                                     | NA  | X   |    | Yuma District RMP |
| 0025          | Crossman Peak <sup>a</sup>         | 102,970       | HRA           | 80                                      | Kingman   | X   |    | Yuma District RMP |
| 0044          | Havasui Heights North <sup>a</sup> | 13,131        | HRA           | 100                                     | NA  | X   |    | Yuma District RMP |
| 0045          | Havasui Heights South <sup>a</sup> | 34,536        | HRA           | 100                                     | NA  | X   |    | Yuma District RMP |

<sup>a</sup> Administered by Kingman Resource Area; all other allotments administered by Lower Gila Resource Area.

<sup>b</sup> 91% of allotment is in public ownership. 129 head on allotment from March-May, 1983.

Source: BLM, Phoenix District Office files, 1983.

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APPENDIX G-3: RANGE IMPROVEMENT SUMMARY  
Bureau of Land Management, Yuma District

| <u>Allotment<br/>Name &amp; No.</u> | <u>Project<br/>No.</u> | <u>Job Name</u>                                  | <u>Location</u>  |
|-------------------------------------|------------------------|--|--|
| Nine Mile<br>No. 3059               | 0424                   | Black Peak District<br>Boundary Fence            | T. 8/9 N., R. 19 W.  |
|                                     | 0971                   | Colorado River Indian<br>Res. Fence              | T. 8 N., R. 19 W.  |
|                                     | 1589                   | Nine Mile Well                                   | SE1/4SW1/4 Sec. 34, T.<br>8 N., R. 18 W.   |
|                                     | 1781                   | Fornes Colorado<br>Indian Res. Boundary<br>Fence |  |
|                                     | 1841                   | Highway Junction Well                            | NW1/4NW1/4 Sec. 34, T.<br>8 N., R. 19 W.   |
|                                     | 2118                   | Fornes Muse Allot<br>Boundary Fence              |  |
|                                     | None                   | Fence  | T. 7/8 N., R. 19 W.  |
| Muse<br>No. 3093                    | A3-R-2201              | Bruce-Muse Allotment<br>Boundary Fence           | Sec. 11, 12,, 13, 14<br>23, 24, 25, 26, 35, &<br>36, T. 9 N., R. 17 W.<br>Gila & Salt River<br>Baseline & Meridian,<br>Yuma County, Arizona                |
|                                     | A3-R-2118              | Muse-Fornes Allotment<br>Fence                   | Sec. 1, 2, 11, 12, 14,<br>14, 23, 24, 25, 26, &<br>35, T. 8 N., R. 17 W.;<br>& Sec. 2, 11, & 14, T.<br>7 N., R. 17 W.,<br>G&SRB&M, Yuma County,<br>Arizona |
|                                     | A3-4-2014              | Dry Tank   | T. 8 N., R. 16 W.,<br>Sec. 35, NE1/4SE1/4,<br>G&SRB&M  |
|                                     | A3-4-1871              | Earthen Reservoir                                | T. 9 N., R. 15 W.,<br>Sec. 20 NE1/4NW1/4,<br>G&SRB&M   |
|                                     | A3-4-1869              | Water Haul                                       | T. 9 N., R. 16 W.,<br>Sec. 28, NE1/4SE1/4,<br>G&SRB&M  |

## APPENDIX G-3: RANGE IMPROVEMENT SUMMARY (Cont'd)

| <u>Allotment<br/>Name &amp; No.</u> | <u>Project<br/>No.</u> | <u>Job Name</u>                       | <u>Location</u>                                       |
|-------------------------------------|------------------------|---------------------------------------|---|
|                                     | A3-4-585               | Water Haul                            | T. 8 N., R. 15 W.,<br>Sec. 31, NE1/4SE1/4,<br>G&SRB&M |
| Ganado<br>No. 3034                  | None                   | Lamb Spring                           | SE1/4NW1/4, Sec. 35,<br>T. 11 N., R. 18 W.            |
|                                     | None                   | Goat Spring                           | SW1/4SE1/4, Sec. 27,<br>T. 11 N., R. 18 W.            |
|                                     | None                   | Black Mtn. Water Haul                 | SW1/4NE1/4, Sec. 11,<br>T. 9 N., R. 19 W.             |
|                                     | 0035                   | Bob's Well                            | NW1/4NW1/4, Sec. 23,<br>T. 9 N., R. 19 W.             |
|                                     | 0424                   | Black Peak District<br>Boundary Fence | T. 9 N., R. 18 W.                                     |
|                                     | 0748                   | Black Mtn. Well                       | SW1/4NE1/4, Sec. 11,<br>T. 9 N., R. 19 W.             |
|                                     | 0834                   | Natural Tank                          | SE1/4NE1/4, Sec. 12,<br>T. 9 N., R. 18 W.             |
|                                     | 1785                   | Bob's Well Holding Trap               | NW1/4NW1/4, Sec. 17,<br>T. 9 N., R. 18 W.             |
|                                     | 1996                   | Water Haul Trough                     | SW1/4NE1/4, Sec. 17,<br>T. 9 N., R. 18 W.             |
|                                     | 4352                   | Black Peak Fence                      | T. 9 N., R. 19 W.                                     |
|                                     | 4530                   | Nuave Corral                          | SW1/4NE1/4, Sec. 1, T.<br>9 N., R. 19 W.              |
|                                     | 4531                   | Black Peak Corral                     | Sec. 23, T. 9 N., R.<br>19 W.                         |
|                                     | 4532                   | Red Hill Corral                       | SE1/4SE1/4, Sec. 6, T.<br>9 N., R. 17 W.              |
|                                     | 4534                   | Red Hill Pipeline                     | SE1/4SE1/4, Sec. 6, T.<br>9 N., R. 17 W.              |
|                                     | 4536                   | Red Hill Well                         | NE1/4SE1/4, Sec. 6, T.<br>9 N., R. 17 W.              |

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## APPENDIX G-3: RANGE IMPROVEMENT SUMMARY (Cont'd)

| <u>Allotment<br/>Name &amp; No.</u> | <u>Project<br/>No.</u>                           | <u>Job Name</u>                            | <u>Location</u>   |
|-------------------------------------|--|--|---|
|                                     | 4537   | Nuave Well                                 | SW1/4NE1/4, Sec. 1, T.<br>9 N., R. 19 W.  |
|                                     | 4538   | Black Peak Well                            | Sec. 23, T. 9 N., R.<br>19 W.   |
| Louis Bishop                        | AZ-R-1165  | Cibola Well                                | SE1/4SE1/4, Sec. 6, T.<br>1 S., R. 23 W., G&SRB&M   |
| Silver Creek                        | 6-C-165  | Borjorques-Bullhead<br>Fence               | East and south boun-<br>dary, Sec. 1 T. 20 N.,<br>R. 22 W.  |
|                                     |  | Fences                                     | North & east section<br>lines Sec. 30, T. 20<br>N., R. 22 W. and<br>south, west, and north<br>sides Sec. 20, T. 20<br>N., R. 22 W.    |
|                                     | 227  | Borjorques-Soto Brothers<br>Boundary Fence | T. 18 N., R. 22 W.  |
| Thumb Butte<br>No. 68A              | 412  | Rucker-Ft. Mohave Fence                    | Starting at the NW<br>corner Sec. 6, T. 20<br>N., R. 21 W.; E 2-3/4<br>mi. to 1/4 mi. W of NE<br>corner Sec. 4, T. 20<br>N., R. 21 W. |
|                                     | 547  | Cattle guard                               | SE1/4SW1/4, Sec. 31,<br>T. 21 N., R. 21 W.  |
| Primrose<br>No. 3069                | No improvements listed for Yuma District portion |  |   |
| Planet<br>No. 3067                  | 0099   | Sec. 26 Tank                               | NE1/4NE1/4, Sec. 26,<br>T. 12 N., R. 17 W.  |
|                                     | 106  | Mohave Spring & Pipeline                   | W1/2SW1/4, Sec. 19, T.<br>13 N., R. 17 W.   |
|                                     | 117  | Upper Mohave Tank                          | NE1/4SE1/4, Sec. 17,<br>T. 13 N., R. 17 W.  |
|                                     | 122  | Mohave Tank                                | SE1/4NE1/4, Sec. 34,<br>T. 13 N., R. 17 W.  |

## APPENDIX G-3: RANGE IMPROVEMENT SUMMARY (Cont'd)

| Allotment<br>Name & No. | Project<br>No. | Job Name                      | Location                                   |
|-------------------------|----------------|-------------------------------|--|
|                         | 0426           | Drilled Well &<br>Improvement | SW1/4SW1/4, Sec. 13,<br>T. 13 N., R. 17 W. |
|                         | 1488           | Well                          | NW1/4SW1/4, Sec. 32,<br>T. 11 N., R. 15 W. |
|                         | 2360           | Mohave Well                   | SW1/4NW1/4, Sec. 35,<br>T. 13 N., R. 17 W. |
|                         | 4223           | Railroad Car Mill             | NE1/4, Sec. 35, T. 13<br>N., R. 17 W.      |
|                         | None           | Well                          | SW1/4SW1/4, Sec. 27,<br>T. 11 N., R. 16 W. |
|                         | None           | Upper Ranch Well              | SW1/4SW1/4, Sec. 32,<br>T. 11 N., R. 16 W. |
|                         | None           | "400" Well                    | NW1/4NE1/4, Sec. 13,<br>T. 13 N., R. 17 W. |
| Wells<br>No. 3088       |                | Tule Spring                   | NW1/4SW1/4, Sec. 32,<br>T. 3 N., R. 20 W.  |
|                         |                | Juanita Wells Well            | SW1/4NW1/4, Sec. 11,<br>T. 3 N., R. 22 W.  |
|                         |                | Service Station Well          | SE1/4SW1/4, Sec. 4, T.<br>3 N., R. 21 W.   |
|                         |                | Gonzales Well                 | NE1/4NE1/4, Sec. 35,<br>T. 4 N., R. 21 W.  |
|                         |                | Colorado River                | West Boundary                              |
|                         | 0111           | Well                          | NW1/4SW1/4, Sec. 9, T.<br>2 N., R. 22 W.   |
|                         | 0604           | Boundary Fence                | Sec. 11, 12, T. 1 N.,<br>R. 23 W.          |
| Scott<br>No. 3075       |                | Sand Tanks                    | W1/2, Sec. 17, T. 2<br>N., R. 19 W.        |
|                         | 829            | Lead Well                     | SW1/4NE1/4, Sec. 32,<br>T. 5 N., R. 19 W.  |

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## APPENDIX G-3: RANGE IMPROVEMENT SUMMARY (Cont'd)

| <u>Allotment<br/>Name &amp; No.</u> | <u>Project<br/>No.</u> | <u>Job Name</u>                   | <u>Location</u>   |
|-------------------------------------|------------------------|-----------------------------------|---|
| Morton<br>No. 3056                  | 1241                   | Scott-Reservation Fence           | Roughly N. to S.<br>through Secs. 22, 27,<br>28, 33, T. 6 N., R. 20<br>W., and Secs. 4, 9,<br>16, 17, T. 5 N., R. 20<br>W.                                  |
|                                     | 4069                   | Kofa Mtn. No. 3 Game<br>Catchment | SE1/4SE1/4, Sec. 1,<br>T. 1 N., R. 19 W.  |
|                                     | 4069                   | Kofa Mtn. No. 3 Game<br>Catchment | or SE1/4NE1/4, Sec.<br>25, T. 2 N., R. 19 W.  |
|                                     | 1831                   | Morton Corral & Cabin             | SW1/4NW1/4, Sec. 28,<br>T. 1 S., R. 19 W.   |
|                                     | 2131                   | Floy Morton Reservoir             | SW1/4NW1/4, Sec. 28,<br>T. 1 S., R. 19 W.   |
|                                     | 4067                   | Kofa Game Catchment<br>No. 1      | NW1/4SE1/4, Sec. 36,<br>T. 1 S., R. 19 W.   |
| Crossman<br>No. 0025                | 4068                   | Kofa Mtns. Catchment<br>No. 2     | NW1/4NW1/4, Sec. 12,<br>T. 1 S., R. 19 W.   |
|                                     | 0860                   | Jones Allotment Fence             | T. 16-1/2 N., R. Peak<br>18 & 19 W.<br>- Start 1/2 corner<br>Sec. 25 & 30 thence<br>south 6 miles to 1/4<br>corner Sec. 25 & 30,<br>T. 16 N., R. 18 & 19 W. |
|                                     | 1009                   | Chemehuevi Ranch Fence            | T. 16 N., R. 19 & 20 W.<br>- Start 1/4 corner<br>Sec. 13 & 18 thence<br>south 3-1/2 miles   |
|                                     | 1223                   | James Williams Fence              | 4-1/4 miles west side<br>of sections 6, 7, 18,<br>19, & 30, T. 15 N., R.<br>19 W.   |
|                                     | 0797                   | Burro Canyon Drift<br>Fence       | 1 mi. Sec. 4, T. 14<br>N., R. 18 W.   |
|                                     | 0802                   | Burro Cottonwood<br>Pipeline      | 7/8 mi. Sec. 4, T. 14<br>N., R. 18 W.   |
|                                     |                        |                                   |   |

## APPENDIX G-3: RANGE IMPROVEMENT SUMMARY (Cont'd)

| <u>Allotment<br/>Name &amp; No.</u> | <u>Project<br/>No.</u> | <u>Job Name</u>                 | <u>Location</u>   |
|-------------------------------------|------------------------|---------------------------------|---|
|                                     | 0813                   | "Sec. 4" Stockwater             | Trough & Corral -<br>NE1/4NE1/4, Sec. 4, T.<br>14 N., R. 18 W.                        |
|                                     | 0809                   | Scott's Well                    | Well, Windmill &<br>Storage - SW1/4NW1/4,<br>Sec. 7, T. 14 N., R.<br>18 W.            |
|                                     | 0817                   | Black Canyon Drift<br>Fence     | 3/8 mi. - Sec. 32, T.<br>15 N., R. 18 W.  |
|                                     | 0824                   | Blacksmith Canyon Well          | Well, Pump, Storage, &<br>Line Camp -- NW1/4<br>SE1/4, Sec. 32, T. 14<br>N., R. 19 W. |
|                                     | 0827                   | Canyon Water Drift<br>Fence     | 5/8 mi. -- SW1/4, Sec.<br>31, T. 15 N., R. 18 W.                                      |
|                                     | 0832                   | "Sec. 31" Corral                | SE1/4SW1/4, Sec. 31,<br>T. 15 N., R. 18 W.  |
|                                     | 0836                   | Arrastra Well                   | Well, Windmill, &<br>Storage -- NE1/4<br>SW1/4, Sec. 1, T. 14<br>N., R. 19 W.         |
|                                     | 0840                   | Buck Mtn. Well                  | Well, Windmill, &<br>Storage -- NW1/4<br>NW1/4, Sec. 8, T. 15<br>N., R. 18 W.         |
|                                     | 0843                   | "Sec. 25 & 26 Pasture<br>Fence" | 1-1/2 mi. -- Sec. 25 &<br>26, T. 15 N., R. 19 W.                                      |
|                                     | 0845                   | Twp. Pasture Fence<br>No. 1     | 6-1/4 mi. -- E. to W.,<br>N1/2 of T. 15 N., R.<br>18 W.                               |
|                                     | 0852                   | Twp. Pasture Fence<br>No. 2     | 9-1/2 mi. -- E. & S.<br>side of T. 16 N., R.<br>19 W.                                 |
|                                     | 0856                   | Twp. Pasture Fence<br>No. 3     | 6 mi. N1/2, T. 16 N.,<br>R. 18 W.   |

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## APPENDIX G-3: RANGE IMPROVEMENT SUMMARY (Cont'd)

| <u>Allotment<br/>Name &amp; No.</u> | <u>Project<br/>No.</u> | <u>Job Name</u>                                | <u>Location</u>  |
|-------------------------------------|------------------------|--|--|
|                                     | 0863                   | "Sec. 36" Pasture Fence                        | 1/2 mi. E. line SE1/4,<br>Sec. 36, T. 16-1/2 N.,<br>R. 19 W.                                       |
| Havasu<br>Heights North<br>No. 0044 |                        | Well, Fences, Corrals,<br>House, Loading Chute | W1/2NW1/4SW1/4 and<br>SW1/4SW1/4NW1/4 Sec.<br>17, and NE1/4SE1/4<br>Sec. 18, T. 14 N., R.<br>20 W. |
|                                     |                        | Joplin Well                                    | Sec. 18, T. 14 N., R.<br>20 W.   |
|                                     |                        | Sec. 16 Well                                   | NE1/3NE1/4 Sec. 16, T.<br>14 N., R. 20 W.  |
| Havasu<br>Heights South<br>No. 0045 |                        | Screwbean Spring                               | SW1/4NW1/4 Sec. 12,<br>T. 13 N., R. 19 W.  |
|                                     |                        | Gold Spring                                    | SW1/4SE1/4 Sec. 8, T.<br>13 N., R. 18 W.   |

Source: BLM, Lower Gila South MSA, Phoenix District, 1983.



## APPENDIX G-4

### Allotment Categorization

In order to establish priorities for future grazing management, each grazing allotment in Yuma District was assigned to one of three management categories. Specific criteria were developed to evaluate the management situation for each allotment and single out those allotments that require a change in present grazing management to resolve conflicts in resource uses. The present condition of the resource, its potential to respond to management changes, the current management situation and the socio-economic feasibility of changing grazing management were all used as criteria in accordance with current BLM policy. Each allotment is placed into one of the three management categories. The management category for an allotment may be changed when resource conditions change or new data become available.

#### Allotments Where Change is Not Needed—Maintain (M)

These allotments are best described by one or more of the following characteristics: vegetation and watershed conditions are satisfactory; the allotment has the potential for high resource production and is producing close to its potential; there are no serious resource use conflicts; and/or the allotment's size and physical characteristics would warrant investment of public funds for range improvements and supervision.

#### Allotments Where Change is Needed—Improve (I)

These allotments are best described by one or more of the following characteristics: vegetation or watershed conditions are not satisfactory; the allotment's potential production is high to moderate, but it is producing below its potential; there are substantive conflicts with other resource uses; the allotment's size, physical characteristics and the anticipated benefits from changes in management would warrant investing public funds for range improvements and supervision.

#### Allotments Where Change is Not Feasible—Custodial (C)

These allotments are best characterized by one or more of the following: little, if any, conflict exists in resource use; overall, resource values are relatively low; the biological potential for response to different management is low; the size or potential productivity of the allotment does not warrant the expenditure of funds for supervision; or the cost of range improvements needed to change grazing management exceeds the expected benefits.

## APPENDIX G-5

### Methodology for Determining Ecological Rangeland Conditions and Trend

A rangeland survey was completed in 1980-81 using BLM's rangeland inventory method for mapping and the Soil Conservation Service (SCS) method for determining condition and trend.

#### Rangeland Condition

The ecological condition of areas within a range site was determined by comparing the present plant community to the climax plant community, as determined by the technical guide for the site. For the existing plant community, specialists counted no more than the maximum weight (or percentage of total production) shown on the guide for any species in the climax plant community.

The amount of all climax species not exceeding that shown on the guide was totaled to show the relative ecological rating or numerical evaluation of the stand. The rating will range from 0 to 100, depending on how closely the plant community resembles the climax plant community for the range site.

The following four classes were used to express the degree to which the present plant community composition reflects climax composition.

TABLE G-5: RANGE CONDITION CLASSES  
Bureau of Land Management, Yuma District

| Ecological Condition Class | Percentage of Present Plant Community that is Climax for the Range Site |
|----------------------------|---|
| Excellent                  | 76-100  |
| Good                       | 51- 75  |
| Fair                       | 26- 50  |
| Poor                       | 0- 25   |

Guides based on the weight of species in the climax plant community truly express ecological condition. A condition rating based on the percentage of composition alone may be adjusted if the total production is less than that characteristic for the condition class. For example, a rating determined by counting the percentage of each climax species may show that the existing plant community is near

## APPENDICES

climax condition but that the production of these species is less than expected for near climax condition. The condition rating can then be lowered, considering current growing conditions.

### Rangeland Trend Data

Rangeland trend data are needed because the present ecological rangeland condition rating alone does not show whether the plant community is improving or deteriorating in relation to its potential. Trend is a separate determination needed to assess what is happening to the plant community.

Rangeland trend is developed from data collected over a period of time. Since trend studies have not been established, BLM determined the apparent trend in order to facilitate analysis and to identify allotments needing special attention during development of management or monitoring plans. "Apparent rangeland trend" was determined for the four P-E allotments during the rangeland inventory for 1980 and 1981. The remaining 10 ephemeral allotments were not inventoried for condition and trend.

## APPENDIX G-6

### Typical Range Improvements

Following is a discussion of typical design features, construction practices and implementation procedures for range improvements proposed in this plan. The extent, location and timing of such actions will be based on allotment-specific management objectives adopted through the AMP process, interdisciplinary development and analysis of proposed actions, and funding.

#### Fences

All fences would be built to BLM manual specifications. Normally fences would be constructed to provide exterior allotment boundaries, divide allotments into pastures, protect streams, and control livestock. Most fences would be three-wire or four-strand with steel posts spaced 16½' apart with intermediate wire stays. Existing fences that create wildlife movement problems would be modified. Proposed fence lines would usually not be bladed or scraped. Gates or cattleguards would be installed where fences cross existing roads.

#### Pipelines

Wherever possible, water pipelines would be buried. The trench would be excavated by a backhoe, ditchwitch or similar equipment. Rigid plastic pipe would be placed in

the trench and the excavated material would be used to backfill. Most pipelines would have water tanks spaced approximately ½ mile apart.

#### Reservoir

Stock pond sites would be selected based on available watershed and hydrologic information. All applicable state laws and regulations would be followed.

#### Wells

Well sites would be selected based on geologic reports that predict the depth to reliable aquifers. All applicable state laws and regulations that apply to ground water would be observed.

## APPENDIX G-7

### Possible Grazing Systems

#### Deferred Rotation Grazing

Deferred rotation is the practice of discontinuing grazing on different parts of an allotment in succeeding years. This practice allows each pasture to rest successfully during the growing season to permit seed production, establishment of seedlings and restoration of plant vigor (Society for Range Management 1974). One or more pastures are grazed during the spring while the remaining pastures are rested. After the seeds of key species have ripened, the pastures which were rested are grazed. Deferred rotation grazing differs from rest rotation grazing in that no yearlong rest is provided.

#### Rest Rotation Grazing

Under a rest rotation grazing system, grazing is deferred on various parts of an allotment during succeeding years and those parts are allowed complete rest for one or more years (Society for Range Management 1974). The allotment is divided into pastures with comparable grazing capacities. Each pasture is systematically grazed and rested to provide for livestock production and other resource values and to simultaneously maintain or improve the vegetation cover. The practice provides greater protection of the soil resource against wind and water erosion.

Any of several rest rotation grazing systems may be used, depending upon the objectives for the allotment and the number of pastures.

### Deferred Grazing (Switchback Grazing)

Deferred grazing is the discontinuance of livestock grazing on an area for a specified period of time during the growing season. Under this system, grazing would begin after key plants have reached an advanced stage of development in their annual growth cycle. The growing season rest provided by this system promotes plant reproduction, establishment of new plants or restoration of the vigor of old plants.

### Alternate Grazing

Alternate grazing allows livestock grazing every other season, with the area being rested in the alternate year. Stoddard et al. (1975) described the system:

Rotation grazing, or alternate grazing, involves subdividing the range into units and grazing one range unit, then another, in regular succession. The rotation system of grazing is based upon the assumption that animals in large numbers make more uniform use of the forage, and that a rest from grazing is beneficial to the plant, even though it must support greater numbers of animals in the shorter time during which it is grazed. Certainly, proper rotation grazing results in more uniform utilization. Large numbers of animals in small units are forced to spread over the entire area and to use the available forage more uniformly. Trampling is reduced because animals are held on small areas where feed is more abundant, and hence less travel is necessary.

## APPENDIX G-8

### Special Ephemeral Rule

Published in the *Federal Register*, Vol. 33, No. 238, Saturday, December 7, 1968 (Livestock Grazing Ephemeral Range: Arizona, California and Nevada).

In accordance with 43 CFR 4115.2-1 regarding special rules for grazing districts and pursuant to the receipt of recommendations of the State Directors for Arizona, California and Nevada and a factual showing of its necessity, a special rule for range designated as ephemeral is hereby approved.

Ephemeral (annual) ranges lie within the general southwest desert region extending primarily into southern Arizona, southern California and southern Nevada and include portions of the Mohave, Sonoran and Chihuahuan deserts.

The region is characterized by desert type vegetation some of which may be classed as ephemeral only. Ephemeral range does not consistently produce forage, but periodically provides annual vegetation suitable for livestock grazing. In years of abundant moisture and other favorable climatic conditions a large amount of forage may be produced. Favorable years are highly unpredictable and the season is usually short lived. Ephemeral areas fall generally below the 3,200 foot contour and below the 8-inch precipitation isoline. A minor percentage of the total plant composition is made up of desirable perennial forage plants and potential to improve range condition and produce a dependable supply of forage by applying intensive management practices is lacking.

Because of the unique characteristics of ephemeral range the following special rule shall apply as follows:

Applicable allotments or uses shall be formally designated by the District Manager as ephemeral range.

An annual application by qualified licensees or permittees is not required unless grazing use is desired. On a year-to-year basis whenever forage exists or climatic conditions indicate the probability of an ephemeral forage crop livestock grazing may be authorized upon application pursuant to any management requirements for the allotment.

Use of base property (water base) during nonforage years is not feasible or economical and no use of base properties is required except during these periods when ephemeral forage is available and livestock grazing occurs.

Therefore:

An annual application per 43 CFR 4115.2-1(c)(9), is not required unless grazing use is described.

Grazing capacity per 43CFR 4115.2-1(c)(3) may be based on a reasonable potential for forage.

Substantial use of grazing privileges per 43 CFR 4115(c)(10) is not required.

A year round operation per 43 CFR 4115.2(c)(1) is not required.

Substantial use of base property per 43 CFR 4115.2-1(c)(7) is not required.

This special rule shall immediately apply to the Phoenix, Safford and Arizona Strip Districts in Arizona, the Bakersfield District in California and the Las Vegas District in Nevada upon recommendation for adoption in that District by the respective District Advisory Board and concurrence by the State Director.

# APPENDIX H

## RECREATION SITES AND FACILITIES

TABLE H-1: BLM-MANAGED RECREATION SITES  
Bureau of Land Management, Yuma District, Arizona

| Sites                                    | Size<br>(Acres)                | Camping<br>Units            | Day Use<br>Units | Total<br>Visitor<br>Capacity | Other<br>Facilities                | Visitor<br>Days<br>Per Year | Visitors<br>On Peak<br>Day |
|--|--------------------------------|-----------------------------|------------------|------------------------------|------------------------------------|-----------------------------|----------------------------|
| Developed Fee Sites:                     |                                |                             |                  |                              |                                    |                             |                            |
| Empire Landing                           | 20                             | 70                          | 50               | 420                          | Restrooms                          | 33,600                      | 500                        |
| Squaw Lake                               | 18                             | 167                         | 80               | 900                          | Ramadas<br>Restrooms<br>Boat Ramps | 99,000                      | 900                        |
| Undeveloped Short-Term<br>Camping Areas: |                                |                             |                  |                              |                                    |                             |                            |
| Take-Off Point                           | 40                             | 70                          | N/A              | 245                          | Vault Toilets<br>Boat Ramp         | 12,000                      | 500                        |
| Oxbow                                    | 15                             | 105                         | N/A              | 370                          | Vault Toilets<br>Boat Ramp         | 24,700                      | 525                        |
| Senator Wash                             | 20                             | 140                         | N/A              | 490                          | Vault Toilets<br>Boat Ramp         | 95,204                      | 2,000                      |
| Senator Wash North Shore                 | 30                             | 210                         | N/A              | 735                          | -----                              | 15,661                      | 1,750                      |
| Day-Use Areas:                           |                                |                             |                  |                              |                                    |                             |                            |
| Section 10                               | 420                            | 0                           | 500              | 1,750                        | -----                              | 83                          | 25                         |
| Cable Car                                | 2                              | 0                           | 10               | 35                           | -----                              | 40                          | 6                          |
| Quail Hollow                             | -----Closed to public use----- |                             |                  |                              |                                    | Unknown                     | Unknown                    |
| Bullfrog Beach                           | 10.5                           | 0                           | 32               | 112                          | Restrooms                          | 900                         | 90                         |
| Crossroads                               | 40                             | 0                           | 10               | 35                           | Ramadas                            | 1,300                       | Unknown                    |
| Bass Point                               | 2.75                           | 0                           | 10               | 35                           | Fishing Access                     | 1,300                       | Unknown                    |
| Patria Flats                             | 25                             | -----Under Development----- |                  |                              |                                    |                             | Unknown                    |
| Trader Horn                              | 100                            | 0                           | 70               | 250                          | -----                              | 2,723                       | 250                        |
| Imperial Dam Floodplain                  | 120                            | 0                           | 260              | 920                          | Vault Toilets                      | 4,000                       | 917                        |
| TOTAL                                    | 863.25                         | 762                         | 1,022            | 6,297                        |                                    | 291,811                     | 7,408                      |

Source: BLM, Yuma District Office files, 1984.

TABLE H-2: RECREATION CONCESSION LEASES\*  
Bureau of Land Management, Yuma District

| Concessions            | Size<br>(Acres) | Camping<br>Units | Campground<br>Visitor<br>Capacity |
|------------------------|-----------------|------------------|-----------------------------------|
| Black Meadow Landing** | 272.6           | 260              | 910                               |
| Havasus Springs**      | 111.3           | 325              | 11,375                            |
| Sunshine               | 10.3            | 43               | 150                               |
| River Lodge            | 59.1            | 94               | 329                               |
| Californian            | 9.5             | 64               | 224                               |
| Big Bend               | 39.0            | 116              | 400                               |
| Echo Lodge             | 47.0            | 205              | 718                               |
| Windmill               | 11.5            | 82               | 287                               |
| Rite Spot              | 4.8             | 0                | 0                                 |
| Sportsman's            | 60.4            | 124              | 434                               |
| Emerald Cove           | 80.0            | 280              | 980                               |
| River Land             | 11.0            | 110              | 385                               |
| Walter's Camp          | 18.0            | 50               | 175                               |
| Imperial Oasis         | 46.1            | 285              | 998                               |
|                        | <u>780.6</u>    | <u>2,038</u>     | <u>17,371</u>                     |

\* No visitor-use figures for individual concessions are available. However, BLM (1983) estimates concession use to be about 850,000 visitor days per year.

\*\* Concessions located on Lake Havasu.

Source: BLM, Yuma District Office files, 1984.

# APPENDICES

TABLE H-3: AREAS LEASED FOR STATE, COUNTY, AND CITY PARKS  
Bureau of Land Management, Yuma District

| Lease Areas                               | Size<br>(Acres) | Camping<br>Units | Day Use<br>Units | Total Visitor<br>Capacity | Other<br>Facilities   | Visitor Days<br>Per Year |
|---|-----------------|------------------|------------------|---------------------------|---|--------------------------|
| Pittsburg Point                           | 1,100.0         | 1,107            | 90               | 13,400                    | Motel, Restaurant<br>Golf Course, Bar,<br>Shops, Beach, Pool,<br>Laundromat, Propane,<br>Store, Boat Slips,<br>Boat Ramp, Baitshop,<br>Boat Fuel, Boat<br>Repairs | 800,000                  |
| Lake Havasu State Park (Other)            | 12,313.9        | 440              | 581              | 6,600                     | Marina, Store, Gas<br>Pumps, Beach, Boat<br>Launching, Boat<br>Repairs, RV Dump<br>Station, Propane,<br>Restaurant, Bait<br>Shop                                  | 323,333                  |
| Lake Havasu State Park (Total)            | 13,413.9        | 1,547            | 671              | 20,000                    |   | 1,123,333                |
| Buckskin Mountains State Park             | 1,676.4         | 115              | 6                | 577                       | Boat Docks;<br>Launches; Boat<br>Storage; Stoves<br>Shelters  | 106,000                  |
| Picacho State Recreation Area             | 4,354.0         | 78               | 70               | 350                       | Showers;<br>Shelters;<br>Launches; Camp-<br>fire Circle   | 19,671                   |
| County-Operated:                          |                 |                  |                  |                           |   |                          |
| Mohave County Park <sup>a</sup>           | 378.0           | 0                | 25               | 1,000                     | Launch; Shelters  | 9,166                    |
| Park Moabi Marina <sup>a</sup>            | 1,050.0         | 724              | 81               | 2,300                     | Shelters; Boat<br>Docks; Launches<br>Store; RV Dump   | 120,324                  |
| La Paz County Park <sup>a</sup>           | 545.0           | 3,815            | 175              | 14,000                    | Showers;<br>Shelters;<br>Launches   | 2,245                    |
| River Bend Recreation Area <sup>b</sup>   | 211.0           | -----            | -----            | -----                     | -----Undeveloped-----   | Unknown                  |
| Golden Shores <sup>b</sup>                | 40.0            | -----            | -----            | -----                     | -----Community Park-----  | Unknown                  |
| SARA Park <sup>b</sup>                    | 1,082.1         | -----            | -----            | -----                     | -----Community Park-----  | Unknown                  |
| City-Operated: <sup>a</sup>               |                 |                  |                  |                           |   |                          |
| Needles Marina                            | 55.0            | 263              | 1 Area           | 921                       | Marina;<br>Launches   | 9,216                    |
| Needles Park(Jack Smith<br>Memorial Park) | 10.0            | -----            | -----            | -----                     | -----Undeveloped-----   | 1,554                    |
| TOTAL                                     | 22,815.4        | 6,545            | 734              | 25,948                    |   | 1,131,022                |

<sup>a</sup>50 year leases, see Chapter 3, Recreation.

<sup>b</sup>Recreation and Public Purposes Leases (R&PP), see Chapter 3, Recreation.  
Source: BLM, Yuma District Office files, 1984.

TABLE H-4: LONG TERM VISITOR AREAS  
Bureau of Land Management, Yuma District

| <u>Areas</u>      | <u>Size<br/>(Acres)</u> | <u>Undeveloped<br/>Camping Units</u> | <u>Total Visitor<br/>Capacity</u> | <u>Other Facilities</u>   | <u>Visitor Days<br/>Per Year</u> |
|-------------------|-------------------------|--------------------------------------|-----------------------------------|---|----------------------------------|
| La Posa           | 10,920                  | 6,600                                | 13,200                            | Vault Toilets;<br>RV Holding Tank   | 452,172                          |
| Imperial Dam LTVA | 3,260                   | 1,995                                | 4,000                             | Ramadas; Vault<br>& Flush Toilets;<br>Amphitheater; RV<br>Holding Tanks;<br>Gray Water<br>Disposals | 308,558                          |
| Total             | 14,180                  | 8,595                                | 17,200                            |   | 760,730                          |

Source: BLM, Yuma District Office files, 1984.

# APPENDIX I

## RECREATION OPPORTUNITY SPECTRUM (ROS) CLASSES

Table I-1 describes each of the six ROS classes in terms of: a) experience opportunities, b) setting opportunities, and c) activity opportunities. These descriptors provide a general overview of the opportunities included in each class, but do not describe each class in detail. Instead, the

table provides a point of departure from which the planner or manager can develop more precise prescriptions encountered in field operations. The listing of activity opportunities is provided for illustrative purposes and is not an all-inclusive list of activity opportunities on the public lands.

**Table I-1: RECREATION OPPORTUNITY SPECTRUM CLASS DESCRIPTIONS**  
Bureau of Land Management, Yuma District

| Opportunity Class                         | Experience Opportunity   | Setting Opportunity  | Activity Opportunity   |
|---|--|--|--|
| Primitive<br>(P)                          | Opportunity for isolation from the sights and sounds of man, to feel a part of the natural environment, to have a high degree of challenge and risk and to use outdoor skills.   | Area is characterized by essentially unmodified natural environment of fairly large size. Concentration of users is very low and evidence of other users is minimal. The area is managed to be essentially free from evidence of man-induced restrictions and controls. Only facilities essential for resource protection are used. No facilities for comfort or convenience of the user are provided. Spacing of groups is informal and dispersed to minimize contacts between groups. Motorized use within the area is not permitted.  | Camping, hiking, climbing, enjoying scenery or natural features, nature study, photography, spelunking, hunting (big game, small game, upland birds, waterfowl), ski touring and snowshoeing, swimming, diving (skin and scuba), fishing, canoeing, sailing and river running (non-motorized craft). |
| Semi-Primitive<br>Non-motorized<br>(SPNM) | Some opportunity for isolation from the sights and sounds of man, but not as important as for primitive opportunities. Opportunity to have high degree of interaction with the natural environment, to have moderate challenge and risk, and to use outdoor skills.  | Area is characterized by a predominantly unmodified natural environment of moderate to large size. Concentration of users is low, but evidence of other area users is often present. On-site controls and restrictions may be present but are subtle. Facilities are provided only for the protection of resource values and the safety of users. Formal spacing of groups may be made to disperse use and limit contacts between groups. Motorized use is not permitted.  | Camping, hiking, climbing, enjoying scenery or natural features, nature study, photography, spelunking, hunting (big game, small game, upland birds, waterfowl), ski touring and snowshoeing, swimming, diving (skin and scuba), fishing, canoeing, sailing and river running (non-motorized craft). |
| Semi-Primitive<br>Motorized<br>(SPM)      | Some opportunity for isolation from the sights and sounds of man, but not as important as for primitive opportunities. Opportunity to have high degree of interaction with the natural environment, to have moderate challenge and risk, and to use outdoor skills. Explicit opportunity to use motorized equipment while in the area.   | Area is characterized by predominantly unmodified natural environment of moderate to large size. Concentration of users is very low, but often there is evidence of other area users present. On-site controls and restrictions may be present, but are subtle. Facilities are provided for the protection of resource values and safety of users only. Formal spacing of groups may be made to disperse use and limit contacts between groups. Motorized use is permitted.  | Same as the above, plus the following: off-road vehicle use, four-wheel drive, dune buggy, dirt bike, snowmobile and power boating.  |
| Roaded Natural<br>(RN)                    | About equal opportunities for affiliation with other user groups and for isolation from sights and sounds of man. Opportunity to have a high degree of interaction with the natural environment. Challenge and risk opportunities are not very important except in specific challenging activities. Practice of outdoor skills may be important. Opportunities for both motorized and nonmotorized recreation are present. | Area is characterized by a generally natural environment with moderate evidence of the sights and sounds of man. Resource modification and use practices are evident but harmonize with the natural environment. Concentration of users is low to moderate with facilities sometimes provided for group activity. On-site controls and restrictions offer a sense of security. Rustic facilities are provided for user convenience as well as for safety and resource protection. Conventional motorized use is provided for in construction standards and design of facilities. | All activities listed previously plus the following: picnicking, rock collecting, wood gathering, auto touring, downhill skiing, snowplay, ice skating, water skiing and other water sports, hand gliding, interpretive use, rustic resorts and organized camps.                                     |



Table I-1: RECREATION OPPORTUNITY SPECTRUM CLASS DESCRIPTIONS (Cont.)

| Opportunity Class                   | Experience Opportunity  | Setting Opportunity  | Activity Opportunity   |
|-------------------------------------|---|--|--|
| Semi-Urban (also called rural) (SU) | Opportunities to experience affiliation with individuals and groups are prevalent as is the convenience of sites and opportunities. These factors are generally more important than the natural setting. Opportunities for wildland challenges, risk taking and testing of outdoor skills are unimportant, except in those activities involving challenge and risk. | Area is characterized by substantially modified natural environment. Resource modification and use practices are obvious. Signs and sounds of man are readily evident and the concentration of users is often moderate to high. A considerable number of facilities are designed for use by a large number of people. Facilities are often provided for specific activities. Developed sites, roads and trails are designed for moderate to high use. Moderate densities are provided far away from developed sites. Facilities for intensive motorized use are available. | All activities listed previously plus the following: competitive games, spectator sports, bicycling, jogging, outdoor concerts and modern resorts. |
| Urban (U)                           | Opportunities to experience affiliation with individuals and groups are prevalent as is the convenience of sites and opportunities. Experiencing the natural environment and the use of outdoor skills are largely unimportant.   | Area is characterized by a highly modified environment, although the background may have natural elements. Vegetation is often exotic and manicured. Soil may be protected by surfacing. Sights and sounds of man, on-site, predominate. Large numbers of users can be expected. Modern facilities are provided for the use and convenience of a large number of people. Controls and restrictions are obvious and numerous. Facilities for high intensity motor use and parking are present with forms of mass transit often available.                                   | All activities listed previously.  |

## APPENDIX J

# METHODOLOGY FOR EVALUATING CULTURAL RESOURCES

The BLM evaluates cultural resources according to their current and potential uses. Cultural resources can be allocated to one or more of the following five use categories (see Glossary):

- 1) Public use
- 2) Socio-cultural use
- 3) Management use
- 4) Current and potential scientific use
- 5) Conservation for future use

Based on existing site information, the cultural resources in Yuma District have been evaluated with respect to these categories and according to specific criteria discussed below. Any cultural resources discovered in the future will be evaluated using these same categories and criteria.

### PUBLIC USE

Conditions which must be considered in allocating cultural resources to public use are site vulnerability, accessibility and public attitudes (awareness).

### SOCIO-CULTURAL USE

Native American tribes (Mohave, Chemehuevi, Cocopah and Quechan) use traditional use areas for hunting and gathering, and sacred areas (mountain peaks, ceremonial dance areas and power areas) for maintaining their spiritual heritage and social continuity.

### MANAGEMENT USE

Cultural resources may be used for experimental or testing purposes to obtain information to better understand the kinds and rates of site deterioration. For example, a portion of a petroglyph site may serve well to test the use of substances to stabilize an eroding surface. Such sites are often altered in this process in order to develop more effective preservation methods.

### SCIENTIFIC USE

The scientific uses of a cultural resource are directly related to the information about past cultures which may be available at a site. The particular type of information which a cultural resource can contribute (i.e., its research potential) is a major factor in determining cultural resource significance and priorities for protection.

Types of scientific information which a site or area may contain are:

- a) **Time Period Studies.** How old is the site, and to what historic or prehistoric period does the former culture belong?
- b) **Prehistoric and Historic Group Studies.** To what historic group (Spanish, Mexican, Westward movement) or prehistoric group or culture (San Dieguito, Amargosa, Hakatayan/Patayan or Yuman) did the physical remains (sites, areas, features, artifacts) belong? What range on the geographic landscape did each group have during various historic or prehistoric periods?
- c) **Cultural Lifeway Systems Information.** Cultural lifeway system studies include a wide and complex series of research potential about how people accomplished various life sustaining functions. These include such diverse information as:

-Settlement patterns—ways in which people developed shelter and habitation systems.

-Subsistence patterns—ways in which people accomplished provision for food.

-Social organization—ways in which people organized families, societies, and political systems, etc.

-Exchange systems—methods by which a people exchanged resources, including goods and services within and between tribal groups.

-Resource use systems—ways in which a people obtained and used various raw materials, plants and wildlife from the natural environment.

-Technological patterns—ways in which a people manufactured and used tools or architectural products to alter or improve life.

-Environmental studies—includes various studies about environmental setting which will broaden understanding about cultural processes, including such areas as pollen studies which reveal past relationships between plant types, environmental conditions and human use of the environment.

In addition, ethnological studies are conducted to determine how the above systems work together to produce unique cultural systems. These studies are directed toward past or present Native American use or interest in an area.

Nearly all district sites or areas contain some information, however, those sites or areas that have the potential to answer major regional research questions (See Glossary—

Class 1 Inventory) are considered more important. Table J-1 shows the kinds of information various sites, features and artifacts can yield about the past.

TABLE J-1: SCIENTIFIC INFORMATION POTENTIAL  
OF CULTURAL RESOURCE SITE TYPES  
Bureau of Land Management, Yuma District

| Cultural Resource Types                  | Studies             |                           |                        | Cultural Lifeway Systems Information |                      |                     |                  |                       |                        |                       |
|--|---------------------|---------------------------|------------------------|--------------------------------------|----------------------|---------------------|------------------|-----------------------|------------------------|-----------------------|
|  | Time Period Studies | Prehistoric Group Studies | Historic Group Studies | Settlement Patterns                  | Subsistence Patterns | Social Organization | Exchange Systems | Resources Use Systems | Technological Patterns | Environmental Studies |
| <b>Prehistoric Sites &amp; Features:</b> |                     |                           |                        |                                      |                      |                     |                  |                       |                        |                       |
| Village Area                             | X                   | X                         | X                      | X                                    | X                    | X                   | X                | X                     | X                      | X                     |
| Camp Site                                | X                   | X                         | X                      | X                                    | X                    | X                   | X                | X                     | X                      | X                     |
| Ceremonial Area                          |                     | X                         | X                      |                                      |                      | X                   |                  |                       |                        |                       |
| Sacred Area                              |                     | X                         | X                      |                                      |                      | X                   |                  |                       |                        |                       |
| Petroglyphs/Pictographs                  | X                   | X                         |                        |                                      | X                    | X                   | X                | X                     |                        |                       |
| Geoglyphs/Intaglios                      | X                   | X                         |                        |                                      |                      | X                   |                  |                       |                        |                       |
| Quarry/Lithic Source                     | X                   | X                         | X                      |                                      | X                    |                     | X                | X                     | X                      |                       |
| Rock Alignment                           |                     | X                         | X                      | X                                    |                      | X                   | X                |                       |                        |                       |
| Rock Cairn                               |                     | X                         |                        |                                      |                      |                     | X                |                       |                        | X                     |
| Roasting Pit/Hearth                      | X                   | X                         |                        | X                                    | X                    |                     |                  | X                     |                        | X                     |
| Hunting Blind                            |                     |                           |                        |                                      | X                    |                     |                  | X                     |                        | X                     |
| Milling Station                          | X                   | X                         |                        |                                      | X                    |                     |                  | X                     |                        |                       |
| <b>Prehistoric Artifacts:</b>            |                     |                           |                        |                                      |                      |                     |                  |                       |                        |                       |
| Lithic Tools/Flakes                      | X                   | X                         |                        | X                                    | X                    | X                   | X                | X                     | X                      |                       |
| Ceramic Vessels/Shards                   | X                   | X                         |                        | X                                    | X                    | X                   | X                | X                     | X                      |                       |
| <b>Prehistoric/Historic Sites:</b>       |                     |                           |                        |                                      |                      |                     |                  |                       |                        |                       |
| Habitation Unit                          | X                   | X                         | X                      | X                                    | X                    | X                   |                  | X                     | X                      |                       |
| Midden/Trash Dump                        | X                   | X                         | X                      | X                                    | X                    |                     | X                | X                     | X                      | X                     |
| Burial/Cremation Site                    | X                   | X                         |                        |                                      |                      | X                   |                  |                       |                        |                       |
| Trail/Road                               |                     | X                         | X                      | X                                    | X                    | X                   |                  | X                     | X                      |                       |
| <b>Historic Sites:</b>                   |                     |                           |                        |                                      |                      |                     |                  |                       |                        |                       |
| Mine Site                                |                     | X                         | X                      |                                      |                      |                     | X                | X                     | X                      |                       |
| Mill Site                                |                     |                           | X                      |                                      |                      |                     |                  | X                     | X                      |                       |
| <b>Environmental Materials:</b>          |                     |                           |                        |                                      |                      |                     |                  |                       |                        |                       |
| Bone/Wood                                | X                   | X                         |                        |                                      | X                    |                     |                  |                       |                        | X                     |
| Seeds/Pollen, etc                        | X                   | X                         |                        |                                      | X                    |                     | X                |                       |                        | X                     |

Source: BLM, Yuma District Office, 1984.

## APPENDICES

### CONSERVATION FOR FUTURE USE

Cultural resources which are unique or contain information not available in other areas have high scientific value. Some sites, such as the intaglios, are rare on a national level and hold high public value. Other sites are considered excellent representative examples of a particular site type. Some sites or areas contain special values sacred to Native Americans. Where these types of scarce resources are known, the BLM considers these properties worthy of segregation from other lands or resource uses which would threaten the maintenance of their present condition. Resources meeting these criteria are considered worthy of preservation for future use.

Several characteristics about specific sites, site types and site artifacts or features influence the ability of these resources to yield information about history or prehistory. The integrity or current condition of a site or area deter-

mine how much information is available. A site which has partially been destroyed usually has relatively less value than a site where integrity or condition is intact.

Uniqueness or rarity of a site or area is also important. A site or area which is considered to be the best example in existence or the only one of its kind is far more significant than common sites. Other factors about the makeup of a particular site—including abundance, complexity and uniqueness of site features and artifacts as well as the relative size and environmental setting contribute to its overall value.

Another category which affects the relative value of all the above criteria is the level of available information. A site or topic which has had exhaustive research and is understood does not hold the same attraction as a site or topic which has not been studied. Thus, the characteristics of an area or site and the level of existing information about them determines the potential use of the cultural resource.